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特撮・ロボットアニメのレガシーを再構築する:
日本メディアの新しいあり方に向けて

Reframing *Tokusatsu* and *Robot* Anime legacy:
Towards new ways of conceiving Japanese Media

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要旨

本研究では、特撮とアニメーションのために開発された DIY アート手法を調査し、その美学的相互影響が日本のメディア状況をどのように形成したかを検討する。まず、戦後、経済的な制約や社会の激変により、限られた創作条件のもとで活動するアーティストたちの共同作業が、どのように定義されたのかに着目する。このシナリオにより、彫刻家、美大生、フリーランス、漫画家、映画監督、アニメーターなどのネットワークができ、日本には無かった芸術の技法や実践が生み出された。このように、本研究では、芸術的コラボレーションとその技術的解決策をたどり、特撮・アニメーションの構築と確立につながった人類学的設定を解き明かすものである。

第二に、この研究は、メディア間の相互影響と、革新的な作品を生み出すためにしばしば互いに依存し合う 2 つの異なる側面として、どのように自らを確立したかを示し、考察している。DIY のコラボレーションは、スタジオの発展と新しいアーティストへの技術的・美的手順の伝達の始まりであり、モンスター（怪獣）やロボット（メカ）の表現と質感について異なる解決策を提示する手助けをしている。本研究では、アーティストの作品やインタビューのほか、これらのメディアを広めることに貢献したファングループやファンジン(同人誌)、活動にも焦点をあてている。プロとアマチュアが共通の空間を共有し、共同で DIY のアート制作を展開することで、アマチュアやファンがやがてプロのアーティストになる。映像制作のハイブリッド化は、両業界で活躍するアニメーターやデザイナーが映像制作のノウハウを共有し、美的スタイルを定義し、拡張していくことを意味した。第三に、このようなスタイルの歴史が、現代の 2D と 3D CGI のハイブリッドなコラボレーションを生み出し、ロボットアニメの表現方法であるスーパーロボット、リアルロボット、ヒューマノイドロボットの規約を設定し、何十年にもわたって異なる解釈を展開していることを研究している。

本研究では、2000 年代以降、アーティストや芸術機関が、デジタルな構成環境の中でアナログモデルをどのように取り込み、その技術的・社会的文脈を明らかにする努力を行ってきたかを紹介することを目的としている。さらに、アニメと特撮の美学的モデルのつながりをアーカイブするために、アーティストから日本でのムーブメントを示すことを目的としている。最後に、2010 年以降にアーティストが制作した展覧会、保存戦略、空間についてマップを作成している。このことによって、特撮やロボットアニメの遺産を保存し、日本のメディアが何を達成できるかを考える新しい方法を生み出すための暫定的な方法を提案することを本論文は目指している。

Abstract

This study investigates the DIY art techniques developed for Tokusatsu and Animation and how their aesthetic cross-influence shaped the Japanese media landscape. First, this research focus on how the post-war period defined a collaborative effort between artists who worked with limited creative conditions due to economic restraints and social upheaval. This scenario created a network between sculptors, art students, freelance workers, manga artists, filmmakers, and animators, collaborating to create art techniques and practices that were unavailable in Japan. As such, this research traces the artistic collaborations and their technical solutions to unravel the anthropological setting that led to Tokusatsu and Animation construction and establishment.

Secondly, this study demonstrates and reflects on the cross-influence between the mediums and how they established themselves as two different ramifications that often rely on each other to produce innovative works. The DIY collaborations are the onset of the studio's development and transmission of technical and aesthetic procedures to new artists, helping them present different solutions for the representation and texture of Monster (*kaijū*) and Robot (*mecha*). Besides investigating artists works and interviews, this research also focuses on fan groups, fanzines, and activities that contributed to expanding these media forms. As professionals and amateurs share common spaces and collaborate to develop DIY art-making, the amateurs and fans eventually become professional artists. The hybridization of image creation meant that animators and designers working in both industries shared the know-how of image production, defining and expanding their aesthetic styles. Thirdly, this study investigates how this stylistic history created contemporary hybrid collaborations between 2D and 3D CGI, setting conventions for the representation of the *Robot Anime* – *Super Robot*, *Real Robot*, and *Humanoid Robots* – developing different interpretations throughout the decades.

This research aims to present how analog models are incorporated in digital composition settings and the efforts being led to uncovering this specific techno-social context by artists and art institutions since the 2000s. Additionally, it aims to show a movement in Japan coming from the artists to archive the connections between anime and tokusatsu aesthetic models. Finally, this research maps exhibitions, preservations strategies, and spaces that artists have created since 2010. In sum, it culminates in a tentative way to reframe the Tokusatsu and Robot Anime legacy to preserve and create new ways of conceiving what Japanese media can achieve.

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Prologue

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Hikawa: Everyone only remembers the characters and the story after watching a film, *Tokusatsu*, or *Animation*. Among the things that are forgotten in this way are the visual effects. There are very unrealistic images in the world, images that are not the norm, and because you watch them, the images themselves feel special. People say, "Eiji Tsuburaya's tokusatsu is amazing!" If you ask why, the conversation usually turns to the means used, such as the size of the miniatures or the use of a blast furnace to melt the iron. The type of image manipulation and the emotions it evokes makes people surprised.

Especially, effect animation requires a kind of scientific experiment, a kind of cultural understanding and reconstruction, where you have to observe nature precisely, take it apart and then reconstruct it in pictures. In the process of replacing reality with animation, the animation is very controllable, so exaggerating only the necessary parts and omitting the unnecessary details. The example of the lava I commented on earlier. If you look at the celluloid, you can see it's a painting. When the lava flows, it seems like real lava. The power of the animation is that it conveys the symbolism of danger if you touch it. Hideaki Anno, in particular, was highly impressed by those effects. After watching Yamato repeatedly, he said he wanted to do effects himself, so he became an effect maker.

It's the same with Tokusatsu. When setting explosives on a building, how and in what order the explosives are to be broken is almost the same as in animation, only the method is a little different. For example, this cut is preceded by a cut with people inside, so let's put in a proper staircase, or this part breaks loudly, so let's make it fly with a bang, etc. Everything is done the same way as in animation, with skilled people considering which materials to use and how they can be combined. So, there is a connection between animation and tokusatsu. It contributes to the excitement and storyline in a way that is different from novels and manga, and it also makes a huge contribution to creating the feeling that you have gone to another world in anime and another world in tokusatsu and experienced that world. But why everyone seems to forget it? Some people think of it as a topping, like *sprinkles*, and I think, no, *that's the main dish*.

(Interview with Professor Ryūsuke Hikawa, 2022)

Introduction: Media Ecology and Surviving Image

Everyone is made up of stories and tales that shape us and the world around us. This research story goes back to when I first arrived in Japan at Narita Airport in 2018. From Narita, I took a bus to Yokohama and saw the beautiful landscapes and similar neighborhoods take shape over my window. When the bus entered Yokohama Bay Bridge, I saw the Minato Mirai area over my window, and suddenly, I felt nostalgic for a place I had never been to. I was astonished and confused as to why this area seemed so dear to me. I thought, from where did I know this place? Then it hit me; it was from the movie *Godzilla vs. Mothra* (ゴジラＶＳモスラ, 1992).

In the movie, a meteorite crashes on Earth, awakening Godzilla and the dark counterpart of Mothra, the monster Battra (バトラ, Batora). Originally, Earth's ecosystem created Battra to destroy a device for climate control that an ancient civilization had built. However, Battra destroys the device and tries to annihilate the human society that it perceives as a disease. In the past, Mothra defeated Battra; now that he is reawakened, the miniature twin fairies warn of the danger ahead and allow Mothra's egg to be transported to Japan. Of course, Godzilla also enters this match.

The final battle culminates in the Minato Mirai area in Yokohama city. I remember vividly the scene of Battra carrying the iconic Ferris wheel and throwing it at Godzilla. Mothra and Godzilla united against Battra, and as the fight ensued, the area was destroyed. The area's miniature still resembles the real place almost twenty years later. Enough that a recently arrived researcher laughs at the magic that moving images and the careful work of miniatures can achieve by blending reality and fiction in such a remarkable manner. In retrospect, this memory almost foretells how space, memory, and images resonate with our living experiences and how this research started taking shape.

That same week, I visited the Graduate School of Film and New Media of Tokyo University of the Arts, which consists of three majors: Film Production, New Media, and Animation. I visited and saw some of the miniatures and puppets on the table that students made for their animation projects. I would later take some classes at this building, but at this first meeting, I noticed that the Animation building location gave an astonishing view of the Minato Mirai battleground. I talked about the view with some of the teachers and staff I met that day, which to my slight surprise, also shared some stories of favorite real-fictitious locations. Although I might not have been entirely

aware of this, that first week had already put me at a crossroads in research fields. A media collision blended by the real and imagined landscape, fracturing but welcoming new combinations that, at that moment, remained a possibility. Within time, I found that the connections I was searching for were in the ensembles between people, moving image techniques, and the imaginary amalgams of the reality-fiction continuum that keep us alive.

* * *

In the last thirty years, there has been an immense interest and research effort to think about moving images, be it animation, cinema, video games, and all the interchange between media textures allowed by the digital medium. This research approaches the media ecology of *Tokusatsu* and *Robot Animation* from the point of view of artists, and people related to them, mainly focusing on collaboration, DIY art techniques, and the building of an artistic legacy. Although they are distinct genres, I argue that they have helped shape each other and solidify certain characteristic styles in Japanese media.

> The fact that both animation and tokusatsu had a close relationship in which they used each other to break through the limitations of their respective areas of expression while recognizing each other's limits is an indispensable perspective in researching the history of images unique to Japanese media arts. (Hikawa et al., 2013, p.103, my translation[1])

Perhaps a better way to describe it is that these worlds are well connected from the point of view of the artist's practice. The experimental approach of utilizing anything available, and testing the limitations of image-making, trespassed the common barriers of these genres. The shared space of technical knowledge that animation and tokusatsu shared – especially the area of visual effects – became the gray area where artists could harness their style by appreciating different artistic approaches. Also, through this research, it became clear that even if artists did not engage directly with the media of animation or tokusatsu, because they grow in this shared visual culture space – by either watching it, obsessing, or being fans – that ultimately influenced their approach to their medium of choice.

[1] "アニメーション、特撮ともに相互に表現域の限界があることを認知しつつ、それを突破 するときに、お互いを利用しあうような密接な関係性があったことは、日本の「メディア 芸術」の中で固有の映像史を研究していく上で、欠かせない視点である."

Although media distinction has laid the foundations for artistic practice's topology, artists technical development does not necessarily follow such limitation. Media stylistic forms are constructed by testing their boundaries, often utilizing a shared technical space with other media to stretch and differentiate themselves. Here, the understanding of media is essential, not only being defined by its visual elements but "(…) "media," in our view, also names a technical form or formal technics, indeed a general mediality that is constitutive of the human as a "biotechnical" form of life." (Mitchell; Hansen, 2010, p. ix). Because media constitutes the environment of the living and is itself a living entity, Mitchell and Hansen call it the "environmental or ecological (in a non-normative sense)" (2010, p. ix). This techno-social assembling fueled the collaboration and differentiation, building two canals that often feed each other, challenging it, and sometimes creating a union in difference.

Because media studies also entail studying its apparatus, it can be charged with a determinist view of its mechanisms. As such, it becomes increasingly important to consider the artist engaging with the aesthetic and sociopolitical environment as part of the abstract machine, following the seminal works of Deleuze and Thomas Lamarre in Japanese media. That is because the abstract machine operates in assemblages towards deterritorialization. "They exceed any mechanism. They are opposed to the abstract in the ordinary sense. The abstract machines consist of *unformed matters and informal functions*." (Deleuze et al., 1984, p. 15). That is because the abstract machine concept goes beyond its technical specificities. "Of expanding the limits of the machine, *stricto sensu*, to the functional ensemble with associates it with man." (Guattari, 1995, p. 34). The abstract machine would be the ensemble capable of relating all the heterogeneous levels through which it is transversal, that is, to the material, cognitive, affective, and social domains. Lamarre adopted this stance when looking at the materiality of Japanese animation, saying, "(…) human thinking happens differently than it would otherwise, in another flow of material forms and immaterial fields." (Lamarre, 2009, p.301). Indeed, how the humans and material and immaterial worlds collide creates new possibilities and territories. This process is what Deleuze and Guattari came to conceptualize as an abstract machine. This conceptualization allows for a definition of media that accounts for aesthetic multiplicity.

Following this line of thinking, the media ecology methodology is, as Matthew Fuller said, "one of the most expressive languages currently has to indicate the massive and dynamic interrelation of processes and objects, beings and things, patterns and matter." (Fuller, 2005, p.2).

To explore this interrelation, the method adopted is going through their existence rather than going across. That means excavating tokusatsu and animation procedures and getting enmeshed in their environment to reevaluate what relationships were created and how they interacted. To understand the in-between space and the movement of relations between these elements, Ingold's view on meshwork, movement, and growth shapes the idea that the inanimate and animated world are living beings. "(…) beings do not simply occupy the world, they inhabit it, and in so doing – in threading their own paths through the meshwork – they contribute to its ever-evolving weave." (Ingold, 2011, p.71). Therefore, artist interviews and accounts of materials, inanimate objects, personal inspirations, and relationships, and how they came to shape and invite aesthetic results are seen as parts of this ever-evolving weave that opens new elements in their environment. As much as humans alter the materials and objects, objects simultaneously change human brain structures, creating a wave of aesthetic and technological agency within a culture.

In Japanese popular cultural studies, there are a variety of research materials about Animation and Tokusatsu. Since I was interested in both fields, I realized some commonalities in technical procedures and various artists that transited between the genres. The more I explored, I thought that a more comprehensive picture could be hiding in the social and aesthetic fabric that connected these artworks. Interestingly, the intimate relationship between animation and tokusatsu is known mainly in artists and industry circles but relatively recent and largely unknown in academic discussions. Their relationship is enmeshed in a social and aesthetic relationship that seems to be invisible. Perhaps this scenario could be attributed to the difference in media texture, institutionalized research fields, and many other possibilities. I wondered how I could approach the task of engaging in the exchange and establishment of two seminal genres and exploring the in-between space, that enmeshed gray environment in which the medium and its effects are being shaped. Could there be a space for a media ecology approach, where the environmental elements are charged, and their correlation gives room for expansion, retreat, death, and *survival* of different artistic aspects?

I defined the relationship between Tokusatsu and Animation as a form of *media collision*. This conception will become clearer throughout this research. Still, for now, it suffices to say that as these genres disputed the attention for averagely the same viewers, their collision was inevitable. Their aesthetic procedures could be renovated by incorporating successful elements of the other genre. In the following chapters, this research will explore how artists were invited to collaborate

on different projects and bring their know-how to the genres. After a stylistic collision, the elements are rearranged while maintaining certain coherence. Each collision assesses other elements, creating distinctive styles, and stimulating the visual field. To analyze these media collisions, this research looks at the parallel histories of how these genres combined and repelled each other and how artists and fans engaged in inhabiting and expanding these aesthetic ecosystems.

To create a heterogeneous perspective, I followed Didi-Huberman's approach of standing before the image as an immersive praxis. While standing before these images, I thought about their time, materials, the perspective of their creators and collaborators, the different receptions, and so on. Tracing the worldview that was required for the existence of specific artworks is a recovery process since "(…) we no longer know the gazes that gave them flesh." (Didi-Huberman, 2005, p. 38). This immersion and recovery can only account for what survived and could return partially. At the same time, there is the paradox of balancing the distance between past and present and how they each propose constraints and challenges. "What does this mean? That everything past is definitively *anachronistic*: it exists or subsists only through the figures that we make of it; so it exists only in the operations of a *reminiscing present*." (Didi-Huberman, 2005, p. 38). By adopting this analytical procedure, I've come to understand that the position and the questions have to move dialectically, with time leaping backward and forward while acknowledging that total synthesis is unachievable. Therefore, instead of proposing a totality of the relationships between tokusatsu and animation, this research focuses on finding a new gaze between them, or rather a buried gaze.

Alexander Zahlten, in the concluding remarks of his book *The End of Japanese Cinema*, states that: "Both live-action film and animation have a long history of noncorporate production by groups and individuals in Japan." (Zahlten, 2017, p.211). Although there are different ways by which the industry has co-opted individual and DIY productions since the 60s and 70s, these practices have consistently re-energized Japanese media. DIY – *do-it-yourself(s)* terminology started to circulate generally as a part of the counter-culture movements of the sixties. In summary, it means the act of doing or taking matters at hand without depending on teachers, institutions, etc. It also means creating or building something with anything available, allowing different practices, community building, and interests to flourish.

Contemporarily, DIY terminology assumed a more political dimension and is also considered a way of citizenship expression. "One may envision the DIY citizen on a continuum,

with one end representing the overtly political/interventionist and the other end representing those simply channeling creativity and a kind of poesis into everyday practices." (Ratto; Boler, 2014, p.19). Indeed, they can differ in intensity, but both spectrums have a political dimension. Specifically, the lived experience of engaging with media and producing art out of everyday or low-cost materials is one of the characteristics that artists in animation and tokusatsu have harnessed. Despite lacking resources and structure, these practices could be considered a political act of engagement with art creation. In art practice, the choice and availability of materials that establish a *techne* or *art style* are understood following Staten: "A techne is socially developed, and as it is developed, it is socially 'inscribed,' established in the form of a practice henceforth available for transmission to new practitioners." (Staten, 2019, p.10).

This research methodology adopts a plural approach, investigating the socially inscribed development of tokusatsu and animation techne combined with anthropological fieldwork of preservation initiatives started by artists and collaborators in these art fields. Furthermore, the ecological method is used to comprehend animation's relationship with other media platforms in contemporary media, following Chow, K. N. (2013), Kato, N. (2012), Morishita, H. (2016), Hikawa R. (2000, 2013, 2019), and other specialized authors. Ryūsuke Hikawa is a long-time researcher of Tokusatsu and Animation, extensively writing on these topics and engaging in preserving them. Hikawa's mapping and critical thinking in the correlation and differences in the media environment have provided valuable methodological and essential background to this research. I'm also indebted to Hiroshi Morishita's works mapping the SF genre evolution in Japan, especially regarding the reception of tokusatsu and its changes. In his writings about *Astro Boy* and *Godzilla*, Katō (2012) says that investigating the construction of Japanese media makes it necessary to look *at the confluence of the two genres* in the media realm.

This research is also indebted to the artists that published numerous books, interviews, and articles that provided intense insight into their practice and socio-historical framework. Iizuka Sadao and Matsumoto Hajime's accounts of optical composition and the transition to digital composition; Toho studios and Tsuburaya Production catalogs containing artists interviews, sculptors accounts of design methods and materials, and various exhibition catalogs. The research and curation reports about tokusatsu and robot anime made by Japan's Agency for Cultural Affairs, namely *Survey on Japanese Tokusatsu* (日本特撮に関する調査) and *Japanese Animation Guide: The History of Robot Anime* (日本アニメーションガイドロボットアニメ編) in their different

versions were utilized to gather data of these genres lineage and structural connections. I also used resources from specialized magazines such as *Animage* (アニメージュ), *Kinema Junpō* (キネマ旬報), and many others as primer sources of technical and aesthetic knowledge archived in published interviews and articles.

While utilizing prime resources about tokusatsu and animation, as well as contemporary theoretical frameworks, this research utilizes some investigative methods that originated in Art History and Criticism. The survival and transmission of aesthetic styles have a long theoretical construction that will aid in understanding and developing a theoretical approach to the present research subject. Aby Warburg's practice considered the image survival or its reappearance in an analysis model that considers both the *technical* and *social* aspects. Warburg signalized that the persistent return of forms and their survival resulted from anthropological sedimentation embedded in the image. Because Warburg's methodological thinking opened the way to think about cultural transmission and social memory by excavating images while interpreting their survival and meaning, this research methodology is deeply indebted to his seminal work and thought. Additionally, Georges Didi-Huberman (2017) also brought Warburg's thought closer to the contemporary framework, and Philippe Alan Michaud (2004) brought Warburg's conceptual framework to look at cinematic techniques and film theory. Furthermore, these authors have shaped my methodological practice and influenced my research approach.

To uncover a distinct gaze between animation and tokusatsu while focusing on their polarities of attraction, repulsion, and collaboration, I was inspired by a methodological principle of investigating unthought connections. "(…) this methodological principle concerning the importance of studying objects devoid of interest at the current moment: what creates meaning in culture is often symptomatic, unthought, or anachronistic aspects." (Didi-Huberman, 2017, p.27-28). It might seem counterintuitive, but historical discourse is never born; it always recommences. By considering these two genres or rather polarities, I pursued methodological procedures that could engage with image analysis and anthropological research while not being limited to closed definitions of progress and decline in art movements.

In his doctoral thesis, Warburg pointed out that " (…) the most difficult problem in all art, which is that of capturing images of life in motion." (Warburg, 1999, p.141). Warburg started studying movement in external cues, such as rippling garments, waving hair, and striding body positions to demonstrate how artists depicted liveliness in motion. Sequentially, the question of

movement became internalized in the image when Warburg looked at the anthropological dimension of art through the concept of *pathosformel* (meaning pathos formula), that is, the image symptomatology. Warburg moved from iconographic analysis toward grounded anthropological research within art research to demonstrate the transformations and developments of human history by analyzing its artistic heritage. Artistic legacies and their heritages were tied to the survival of iconographic cycles that reappeared in different periods, awakened by cultural and social symptoms. "In contrast to the formalist theories of Semper, Riegl, and Wölfflin, Warburg's hermeneutics of the image recognizes several levels of image analysis: the image, its emotional charge, its content, and its meaning. Of these levels, the last is essentially the most irrelevant." (Santini, 2021, p. 286, my translation[2]). He considered images as anthropologically embedded objects and investigated their forms and meanings in an integrated analysis.

Warburg passed away in 1929, leaving the *Atlas Mnemosyne* project partially unfinished. The project was a cartographic sequence interpretation of art history in a network of composed images organized in multiple panels. This project "(…) distribute or organize the representation into archipelagos or, in other words, as Werner Hoffman has put it, into constellations." (Michaud, 2007, p.253). In the next decade, Benjamin would also leave an unfinished project after passing, *The Arcades Project*, published in 1982. The project mapped Parisian nineteenth-century arcades, that is, glass-roofed rows of shops for consumers, to denaturalize the continuity of progress and unravel the afterlife of these ruins. The project contains a montage form, with a patchwork of quotations in a philosophic play of distance, transition, and juxtapositions. Simon Gunn exemplifies the uniqueness of the *Arcades Project*: "(…) history decays into images, not into stories." (Gunn, 2002, p.266). Although the art objects I analyze are distinct, this research is undoubtedly indebted to Warburg and Benjamin's methodological practices of investigating the afterlife of images and their sociocultural impact.

Moreover, by combining researching prime document sources and image analysis that accounts for technical and social elements, this research finally focuses on contemporary movements to archive and preserve tokusatsu and animation coming from artists. Through a series of interviews, fieldwork on institutions, and documentation analysis, the final section brings images, artists, and collaborators background stories to the central stage. I trace a story that

[2] "Im Gegensatz zu den formalistischen Theorien von Semper, Riegl und Wölfflin erkennt Warburgs Hermeneutik des Bildes verschiedene Ebenen der Bildanalyse an: das Bild, seine emotionale Ladung, seinen Inhalt sowie seine Bedeutung. Von diesen Ebenen ist die letzte im Wesentlichen die irrelevanteste."

approximately started with the exhibition *TOKUSATSU: Special Effects Museum-Craftmanship of Showa & Heisei Eras Seen through Miniatures* (2012), curated by Hideaki Anno and collaborators and held at the Tokyo Museum of Contemporary Art. It looks at the non-profit organization Anime Tokusatsu Archive Center (ATAC), founded in 2017 and presided over by Hideaki Anno and vice-presidents Hikawa Ryūsuke and Shinji Higuchi. It looks at how these movements contributed to establishing the *Tsuburaya Eiji Museum* (2019) and *Sukagawa Tokusatsu Archive Center* (2020), located in Eiji Tsuburaya's hometown of Sukagawa, Fukushima Prefecture. It then looks at the possibilities that preservation, research, and the establishment of institutions fueled by artists can assume in the coming years.

Chapter's structure summary

1) The first chapter examines the birth of DIY techniques in post-war Japan. It investigates the establishment of tokusatsu, artists pioneers, and the materiality practices that created the base for Japanese Popular Culture. 2) The second chapter looks at the introduction of television and the experimental combinations between animation and tokusatsu in the sixties and seventies. It captures the expansion of the tokusatsu genre, both aesthetically and geographically. Additionally, it includes the interview I conducted with Hikawa Ryūsuke, a founding member of the *Monster Club*, of the first fan clubs to be formed in Japan. 3) The third chapter focuses on animation technical and composition structures in the *super robot* style and the transition to *the real robot*, looking at the influence of tokusatsu practices. It further explores DIY fanzine practices and how fans were crucial in preserving animation materials. Additionally, it includes the interview I conducted with artist and author Yoshie Kawahara, one of the first female animators to work at Sunrise. It gives insights into production practices and their closeness with fan activities.

4) The fourth chapter focus on the golden era of *real robot* mechanic designs and the collaborations between amateur and professional artists. The development of specialized fan activities, their engagement with *Gundam*, and the idea of new humans. 5) The fifth chapter focuses on the transition from *real robots* to *humanoid robots* and the increasing approximation of representations that combine flesh and machine. It looks at the impact of *Evangelion* and how the connections between robot anime and tokusatsu were essential for its conception. Finally, the chapter moves toward the topic of rebuilding Tokusatsu and Robot Anime legacies. 6) The sixth

chapter looks at surviving media practices, especially initiatives and preservations led by artists and collaborators after the 2010s. This chapter focuses on the backstories of the *Tokusatsu Museum Exhibition*, the establishment of *ATAC, Sukagawa Tokusatsu Archive Center*, and the *Tsuburaya Eiji Museum*. These stories are traced through my research fieldwork and interviews at the facilities and with its members to uncover their practices and hopes for Tokusatsu and Animation in the future. Ultimately it finishes with an essay exploring how practices between tokusatsu and animation are behaving in contemporary productions, paying attention to the use of digital tools implementation and the stories of preservation and artists collaboration traced in the chapter.

The last part is where I elaborate final remarks on how the stylistic connections between Tokusatsu and Animation, the artists efforts to preserve and archive artworks, come together in the contemporary landscape of Japanese Media. It shares conclusions about analyzing Japanese media establishment and transmission with a methodology that looks at the connections between technical and social practices. Ultimately, I look at the possibility of reframing the relationship between Tokusatsu and Animation as a way to create alternative ways of conceiving Japanese media.

Chapter 1: Tokusatsu Pioneers

1.0. DIY Art Techniques and the birth of a post-war Nation

The development of techniques to create images is deeply rooted in the anthropological crystallization of a cultural movement or historical *zeitgeist*. In this sense, the image carries aesthetic forms and an epoch's overall actions, knowledge, and beliefs. For this reason, this chapter is meant to open the iconographic material to identify the complex historical, anthropological, and political framework in the wake of a post-war nation. To begin with, decompartmentalizing the image is necessary to understand that there is a complex multitude of time, that is, the time of the image and the time of history. As Didi-Huberman said: "There is no history of art without a philosophy of history, that is, without a certain choice of *temporal modes*, just as there is no history of art without a philosophy of art and a certain choice of *aesthetic models*." (Didi-Huberman, 2017, p.4). The image has an internal movement, and its stylistic transmission can operate within and outside its original historical framework. Since they have temporal modes, long periods of latencies, and a critical resurgence that portrays their survival even in their apparent demise, images can contradict a historical *zeitgeist* and anachronize time.

That is also to say that time is impure, and the sense of what comes before and what comes after possesses a margin of indeterminacy. That is why the post-war terminology means tensions that came before, during, and after the Second World War in Japan. Notably, what was seen as an inevitable need for modernization created a stark contrast between what it meant to give birth to full-fledged modern power, posing dilemmas for prewar Japan, its historical continuity, and its identity as a nation. The discontinuities of historical Japan, the interpretative narratives of warfare that led to the imperialist invasions of other parts of Asia, the atomic bombings, and the defeat that provoked a political, economic, and ideological crisis marked the moment of forced split and consequently forced integration to rebuild Japan sovereignty. This movement has not stopped, as it resurges again when emergencies and disasters anachronize time.

When the 2011 Tohōku Earthquake and Tsunami occurred on eleven March (3.11), it created a national crisis, causing massive damage in the Tohōku and the Kantō region. The magnitude 9.0 earthquake triggered a tsunami over forty meters high in some places, culminating

in the Fukushima nuclear disaster in the Fukushima Dai-Ichi Nuclear power plant administered by TEPCO. The earthquake and tsunami caused the meltdown of three nuclear reactors, causing environmental contamination with radioactive substances and the displacement of hundreds of thousands of residents. Prime Minister Naoto Kan said at the time, "(…) this has been the biggest and most difficult crisis for Japan in the sixty-five years since the end of World War II." (Tanaka, 2014, p.136). In a sense, as proposed by Tanaka, the second World War influenced and fundamentally changed the apocalyptic imagination in the subsequent crisis that emerged in Japan.

The literary critic Norihiro Katō in his book "*3.11 Shinigami ni Tsukitobasareru*" (3.11 死に神に突き飛ばされる, 2013), concerning the aftermath of the 3.11 disaster, wrote particularly about the relation of the disaster with the problematic questions of rapid economic growth, and the implementation of nuclear power plants through the expressions of two post-war icons, *Godzilla*, and *Astro Boy*. In Kato's view, Astro Boy symbolized "prayer" as a good symbol for the peaceful use of nuclear energy, and Godzilla represented "regret," embodying the fear and resentment of nuclear power. As such, in his view, the problem of postwar Japanese society would lie in its inability to integrate the two views of nuclear energy, that is, "nuclear power" = nuclear power generation and "nuclear" = atomic and hydrogen bombs (Katō, 2013, p.99-100). Additionally, these characters have continued to exist independently as representatives of *Tokusatsu*, and *Anime* genres, bringing the monster (怪獣, *kaijū*) and the robot/mecha (ロボット, メカ) to the forefront of postwar and contemporary Japanese popular culture.

One of the critical remarks made by Katō is that the relationship between the two characters configures a missing link or blind spot in the interpretations regarding nuclear energy discourses at that time, which continued to reverberate in distinct ways in popular culture. First, they were both created in response to the emergency of nuclear energy in the broad sense and the experience of the atomic bombings in Japan. In 1951, as Japan and the USA moved to conclude a Peace Treaty, Tezuka Osamu conceived the manga *Ambassador Atom* (アトム大使, *Atomu Taishi*, 1951-1952), serialized in Kōbunsha's Shōnen magazine. The manga's theme is about coexistence and conflict between humans and aliens from another planet, and the character Atom tries to negotiate peace and be an ambassador. After that, Tezuka launched the manga *Astro Boy*, also translated as *Mighty Atom* (鉄腕アトム, *Tetsuwan Atomu*, April 1952-1968), following the story concept based on the desire for the peaceful use of nuclear energy. The manga was serialized in the same magazine two

and half years before the movie *Godzilla* (ゴジラ, *Gojira*, November 1954) and later would be adapted into a respective tokusatsu (1959-1960) and animation (1963-1966) series. In a larger sense, *Godzilla* was firstly created in response to the radiation exposure of the *Daigo Fukuryū Maru* due to the hydrogen bomb test performed by the USA at Bikini Atoll in 1954.

However, the idea of the peaceful use of nuclear energy in Japan, which had been bombarded with it two times, could not have been born without the influence of the USA postwar policy and media campaigns of *Atoms for Peace* and *Project Candor*, launched by Dwight D. Eisenhower's administration in December 1953. These campaigns aimed to manage fears of continued nuclear armament while promoting the peaceful use of atomic energy even in the early stages of the Cold War. The incident of *Daigo Fukuryū Maru* created an anti-nuclear movement in Japan, which prompted the United States Information Agency (USIA) in Tokyo and the Operations Coordinating Board (OCB) in Washington to be concerned about USA-Japan relations status and warning that the Japan Communist Party (JCP) might benefit from this incident. "A number of official initiatives followed, culminating in a proposal on April 28th, 1954, that the USIA organize exhibitions on the peaceful uses of atomic energy and promote contacts with Japanese scientists and engineers as well as with media figures and politicians who held favorable views of the United States." (Zwigenberg, 2012, p.3). The establishment of the nuclear energy industry in Japan would not proceed without US aid, which could be in jeopardy if suspected communists were involved.

> Such pressure from the U.S. government, and the legacy of anti-Communist policies during the occupation, the spirit of which the Japanese government itself continued to enforce, combined effectively to sideline leftist-oriented scientists and reformers in the formative development of the nuclear energy industry in Japan. As a consequence, the Japan Science Council would not realize the platform of non-secrecy, democratic control, and autonomy in science that its Marxist leadership had inspired. (Grunden, 2018, p.364)

As such, the conservative parties of the government, with the aid of politician Yasuhiro Nakasone, and the cooperation of private commercial interests, came to dominate the nuclear energy development in Japan. In November 1955, Japan and USA signed their first nuclear cooperation agreement. Therefore, within Prime Minister Ichirō Hatoyama's administration (1954-1956), Matsutarō Shōriki becomes responsible for leading the campaign for promoting

nuclear power to resist communism. "(…) Shoriki brought American television technology to Japan, like nuclear power, despite the fact that it made little technological or economic sense and overrode domestic technology." (Zwigenberg, 2012, p.4). There is a strong correlation between the acceptance of nuclear energy and the desire for rapid economic growth, as Katō (2013) observed. In Hiroshima, while there were numerous anti-nuclear movements, the local politicians wanted to rebuild the city as a modern metropolis with the interest of city developers. In a sense, peace was equated with capitalist prosperity, and the exhibitions *Atoms for Peace* (1956) and the *Hiroshima Restoration Exhibition* (1958) were part of co-opting the opposition and making the progress discourse appealing, given that atomic power could revolutionize daily life for the Japanese people. In the *Atoms for Peace exhibition*, the millionth visitor received a gift. "The lucky visitor, who was a schoolboy – organized groups were the bulk of visitors – was to receive a television, a precious gift at the time." (Zwigenberg, 2014, p.121). The gift at that time symbolized the technological advance and progress unraveled in the exhibition materials about nuclear energy.

On the twenty-eight of March 2011, author Kenzaburō Ōe (1935-) wrote an article called *History Repeats* to The New Yorker journal about Japan becoming a fourth-time victim of the atom, including Hiroshima, Nagasaki, victims of *Daigo Fukuryū Maru*, and the *3.11 Earthquake*. The article also questions the pacifism embedded in the Japanese constitution regarding the renunciation of force and the three non-nuclear principles of not owning, manufacturing, and introducing nuclear weapons into Japan. The last policy was initiated by then Prime Minister Sato Eisaku in December 1967. However, for Kenzaburō Ōe, even though these policies accurately represented the ideals of a post-war Japan, they were swiftly changed with a reconstituted military force and accorded with the USA to allow nuclear weapons in Japanese territory. "Therein lies the ambiguity of contemporary Japan: it is a pacifist nation sheltering under the American nuclear umbrella." (Ōe, 2011, para.3). This ambiguity is what made Saburō Kawamoto ask, "Why is Godzilla dark?" in his book "*Ima hitotabi no sengo Nippon Eiga*" (今ひとたびの戦後日本映画, 1994), to which Katō added: "What emerges here is the question, "Why is Atom so bright?" (Kato, 2012, p.17). In a sense, the dichotomous views of nuclear technology spread in the postwar period, and different aesthetic forms appeared within the *Monster*, and the *Robot* figures well into contemporary times.

> This shows the effect of a kind of "after-action" that the nuclear disaster of March 11 produced. The idea is that the peaceful use of nuclear energy and the military use of nuclear energy are connected like a Möbius circle and that the peaceful use (nuclear energy) thought as good (light) and the military use (nuclear weapons) thought as bad (darkness) cannot be separated, as the accident showed. (Katō, 2012, p.21, my translation[3])

Another point of this discussion is how and why this theme survived and returned after the 3.11 Earthquake, with *Godzilla* and *Atom* as key figures for critical thinking, interpreted as a missing link. *Godzilla* is a *tokusatsu* movie, and *Astro Boy* was originally a manga adapted into animation and a tokusatsu series. Historically, Literature and Art history criticism predate the fields of Film, Manga & Comics, and Animation and the development of their critical analysis as art forms. Since these twenty-century media forms were highly new and were considered alternative or low-budget productions, there was a gap in establishing critical research on these art forms. The lack of research and methodology into these art forms partially created a vacuum, or missing link, in their historical and aesthetical importance. It's crucial also to understand that *Godzilla* and *Astro Boy* were created after the censorship control of Japanese media production by the USA was lifted. That meant that creating critical artworks while experiencing the political tension in daily life was still challenging for artists. They had to be creative with the materials and resources and carefully craft their discourse. Considering this context, even if popular culture artworks contain elements of entertainment, it does not mean that political and sociocultural factors are not taking a vital part in their construction.

> The delegitimating critique of popular art, though typically pursued under the banner of safeguarding our aesthetic satisfaction, thus represents an ascetic renunciation, one of many forms that intellectuals since Plato have employed to subordinate the unruly power and appeal of the aesthetic. (Schusterman, 2017, p.327)

To counter this state of affairs, it is still necessary to create a space to free the monopolization of aesthetics by pursuing the research legitimacy of popular culture artworks.

[3] "ここには、3. 11 の原発災害が生み出すことになった一種の"事後の目" の効果がよく現れている。それは、今回の事故が示したように、原子力の 平和利用と軍事使用はメビウスの輪のようにつながっている、善=光としての平和利用(原子力)と悪=闇としての軍事使用(核兵器)は、分かつことができないとする考え方である."

There is already a large body of work in this direction that considers artworks as inhabiting the world and being intimately integrated with the anthropological ethos of life. The materiality of popular artworks and the sociological conditions in which they are embedded ultimately give a powerful portrayal of how artists found new creative ways to respond and interact with the problems of their time. *Godzilla* and *Astro Boy* were artworks that created a critical discourse that continues to echo well into contemporary times. They also became iconic figures that helped establish the Anime and Tokusatsu media and, together with other artistic productions, crafted Japan's national image over the decades. The aftermath of the *3.11 Earthquake* and the surge of critical thinking related to these two iconic figures point to a *gap* between critical thinking and media creation being recognized and brought forth. It is my understanding that the artistic creation that produces images is powered by the social movements that are crystallized in the image. The social movements are not static, and here they assume the definition given by Didi-Huberman. "These movements transverse it through and through, each one having its own trajectory – historical, anthropological, and psychological – starting from a distance and continuing beyond it." (Didi-Huberman, 2017, p.19).

Didi-Huberman, who deeply researched Aby Warburg's critical practice, says that to stand before an image is to stand before a complex time. In doing so, to decompartmentalize an image is also to understand the complex time that bears within itself and the interpretations that it has been given. Images survive and return in discourse and artistic reflection because they are dynamic, energy-bearing existences that challenge the understanding created around them and show that the time of an image is not directly related to the time of history. As they survive through time, they become complex and can interact with different historical periods and images and assume distinct meanings. In this sense, it's possible to think that the art object is a complex set of relations, a heterogeneous dynamic point of encounter. The person who stands before the image has to open up the time surrounding it and bring an analysis that accounts for the symptomatic play that surfaced in a given cultural moment. This research accounts for the formation of *Tokusatsu* and *Anime* artistic styles, their developmental coexistence, and the play of functions given in its discourses. The account of their aesthetic legacy attempts points to a blind spot, a possibility of movement and understanding of its complexity amid its death, survival, and fractured history. This chapter will look at the materiality of DIY art techniques in the wake of postwar Japan and the

social elements present in the artist's experience account at that time to further comprehend the forces at play in response to sociological, economic, and aesthetic values.

This chapter starts with *Godzilla* and *Astro Boy* artworks since their materiality was born in the postwar framework. A framework marked by scarcity of materials, a fractured economic and social structure, the lack of established artistic techniques, the trauma of defeat and occupation, and the re-establishment of a Nation, domestically and internationally. After the end of the Second World War, one of the first directives of the Allied Occupation to the Japanese government concerned the mapping of military-related industries and the situation regarding scientific research and development in the country. To achieve this mapping, they dispatched intelligence teams to gather information, which resulted in the report "Scientific Intelligence Survey." The report created a picture of "(…) noting, in particular, Japan's lack of material sources, limited industry capacity, and ineffectual effort to mobilize scientists to support the war effort." (Gruden, 2018, p. 347). The post-war media movement started from economic and social struggles marked by a lack of material sources, and eventually powered by different agents; it became what we know today as a worldwide entertainment industry.

In general discourse, the lack of material sources that had made artists develop DIY techniques would be an account of a stepping stone that harnessed a booming industry. In the 2000's it became *Cool Japan*, following Douglas MacGray's article on *Foreign Policy*, the *Cool Japan Strategy* in 2010, to promote and incentive the creative industries domestically and abroad[4]. This use of soft power could be understood as Nye came to define as "(…) a staple of daily democratic politics." (Nye, 2004, p.6), and the ability to co-opt and attract people through culture. This discourse has fluctuated in recent times, with the geopolitical shifts after the start of the Global Coronavirus pandemic and increasing tensions over China and Russia's actions[5]. The shifts in discourse involving economic, political, and aesthetic value as means of national power are a good indicator of how the entertainment industries can be a set of an invisible political battle. However, technological progress and commercial success reports often pass quickly through artwork techniques and materiality discussion. The cultural analysis also often focuses on narrative construction and cultural interpretation as the core of the debate.

[4] For more details, see: https://www.cao.go.jp/cool_japan/english/index-e html (Accessed 2022 March 12).
[5] See Kawasaki, Tsuyoshi. (2022) *Japan's Soft Power in Struggle over International Order*. Japan and the World in the Age of 'Multilayer Globalism' 2020 to 2023 (Commentary). Available at: https://www.jfir.or.jp/en/studygroup_article/3933/ (Accessed 2022 August 10).

Throughout this research, it will become apparent that in *Tokusatsu* and *Anime,* the artist's practices, and the materials used in art techniques, were mostly curated and archived primarily by the artists themselves and their fans. However enormous the success of the Japanese media industry appears to be, it is telling that independent practices and underground collaboration are at the core of preserving some of its most iconic artworks. That is not to say that the industry has not actively collaborated in this process; however, the most potent acts of engaging in the artistic preservation of popular culture and its research come from artists and engaged collaborators. Additionally, Japanese popular media has received academic attention in the last thirty years, which means that it is still young and fresh research. Therefore, there is a large field of potentiality to be explored and systematically discussed.

The commercial success of popular culture artworks seems to have created a scenario where critical and entertainment spheres cannot coexist due to capitalism's pervasive nature. Perhaps, this is where the gray area is lost, and the possibility of seeing that perceiving an art form only as entertainment could be a political stance. Besides reading into the artwork itself, a political practice can be found in the social relationships and artistic practices that created such a work. In many successful productions, they were not expected to achieve such results and were deemed successful in retrospect. Perhaps the stance of looking at a social phenomenon within a contemporary view creates the illusion that audience receptivity was easily achieved. I would argue that the commercial success shows that the audience has been crafted and created over the years, not only in the prominent artworks but in the multiple channels that provided materials, such as magazines, products, action figures, and so on, enriching the viewer experience. That includes building generations that could appreciate such productions and eventually develop and transmit new aesthetic creations. Before this writing dives into the aesthetic properties of the DIY art techniques in Japanese media, it is necessary to ask: when and how can "politics" seem to fall out of popular culture?

1.1. Popular culture and the (a) political framework

Since the late 1990s, the importance of character success has been increasing in various media, such as manga, anime, movies, video games, TV tokusatsu shows, novels, and all sorts of media interchangement in contemporary Japanese popular culture. Roughly put under the *otaku* culture umbrella, the visual Japanese culture boom has been spread globally through internet services, underground forums, festivals celebrating cosplay, merchandising and piracy websites, and various widely interconnected online and offline communities. The emergence of interconnected patterns in a distributive manner also relies on the self-organizing capacity of the otaku network. As Thomas Lamarre suggests in *An introduction to otaku culture* (2004), this capacity for self-organization can be thought of in terms of constitutive power; that is, it is possible to quantify, organize, and work with patterns, but there is always a heterogeneous and autonomous power that escapes or exceeds rationalization. This is a cooperation in which elements interact locally and globally.

Because an overabundance of characters characterizes popular culture, the interaction between characters and people creates an affective relationship that makes people feel their existence through the body, which creates a sense of closeness with images. “They have an affinity for fictional contexts (*Kyoko no kontekusuto*). They resort to fictionalization in order to possess the object of their love. They have multiple orientations when it comes to enjoying fiction.” (Saitō, 2007, p.227). In a sense, in otaku culture, there is a break in the perception of distance from the image and its fictionality, which creates universes of affection. What could be called an affective break from the frame occurs when the immersive worlds of moving images and their characters expand into forms such as cosplay, character model kits that fans mold, and personalization of personal environments with objects or props of these universes, among numerous practices of cultivating Japanese popular culture.

One example that problematizes the proximity of affective relationship with images and critical reception can be seen in *Hetalia: Axis Powers*, a satirical webcomic published as a manga by Hidekaz Himaruya. The story is set in the Second World War period, featuring countries personified by boyish characters exaggerating stereotypical positive and negative features of those countries, including Germany, Japan, Korea, the United States, and Russia, among other countries.

Controversy arose about the depiction of the South Korean character when it was translated into Korean and with the announcement of an anime adaptation to be broadcasted on Kids Station in 2009. A petition was launched on the Korean web portal Daum calling for the anime cancelation. The South Korean Grand National Party brought the issue to the National Assembly Committee. "At the Special Assembly Committee on Defensive Measures for the Liancourt Rocks, on January 13, 2009, she accused the manga of being insulting to the Korean people, calling *Hetalia* a criminal act, (…)." (Miyake, 2013, p.3).

Interestingly, the reception of this news in Japan caused confusion among people on the internet. "With a few exceptions, most of the comments were negative, saying that Korea's stance was clearly excessive and that it was childish to be upset about a mere manga." (Morishita, 2016, p.12, my translation[6]). Since it was a manga character depiction, it was normalized that misalignments might happen, and in counterpart, the European countries didn't have such criticisms. Morishita's analysis shows that in this example, two points emerged. "In other words, there are two points: the reception of the work is centered on the characters, and such reception is understood as a highly "non-political" act." (Morishita, 2016, p.12, my translation[7]). Additionally, Morishita points to how popular culture is under pressure to change since the business models that supported Japan in the postwar period are becoming unattainable since the 2000s.

Morishita explores this example as an indication that many Japanese people might find political reading unsuitable for popular culture artworks. Of course, this dilemma encompasses popular culture views and approaches that are larger than this research topic; however, it affects the reception and often the possible criticism that such works can receive. The dilemma of what can be political or deemed worthy of a discussion without assuming an a-political nature or minor aesthetic value is caught up between critical lineage and division of low and high art, of traditions of a certain elitism in art history that even though it has been challenged it still lingers and returns inside and outside of academic circles. Nevertheless, the transmission of cultural forms inevitably involves political elements and findings ways of dealing with them while not presuming that they don't have a critical approach might be a start to understanding their movements. I agree with Lyotard when he says that if the mechanical and industrial appear in the art field, it should not be

[6] "韓国の姿勢は明らかに行き過ぎであり、「たかがマンガにいちいち目くじらを立てるのはいかにも幼稚な態度だ」などと一部を除いて否定的な意見がほとんどだった."
[7] "それはすなわち、キャラクターを中心として作品が受容されることと、そうした受容がきわめて「非政治的」な行為として理解されていることの二点である."

received as a disaster, “except if one believes that art is in its essence the expression of an individuality of genius assisted by an elite craftsmanship.” (Lyotard, 2010, p. 241). Instead, it should allow space to question art narratives received from the predecessors, not rely on totality, and realize the differences that can arise in contemporary art forms. Morishita makes it clear by saying: “(…) it is necessary to deal with the problem without assuming popular culture’s “non-political” nature.” (Morishita, 2016, p.15, my translation[8]). Another important example for this discussion is the reception of *Godzilla* (1954) and the differences in critical reception that it received inside and outside of Japan.

> She says: “Oh no. We've had atomic tuna, radioactive rain, and now Godzilla. What’s going to happen if one of them comes into Tokyo Bay?”
> Man A: “You'd be the first to be targeted, wouldn't you?”
> Woman: “Ah! That's not good. It's my precious body that was saved alive from the atomic bomb in Nagasaki…”
> Man B: “Maybe we should start looking for a place to evacuate”
> Woman: “Can you find somewhere for me too?”
> Man A: “Oh no. Another evacuation. I hate that.” (*Godzilla*, 1954, dialogue, my translation[9])

The dialogue extracted from *Godzilla* (1954) connects with the social setting that shaped the construction of its reception, as a succession of atomic and hydrogen bombs befalling the Japanese people. In a way, the dialogue shows that *Godzilla* attacking Japan is also seen as unreasonable. Even though the movie does not name it openly, the monster’s origin is directly connected to the bombs dropped by the US and the general context of its launching. At the time, when *Daigo Fukuryū Maru* men suffered from radiation poisoning, contaminated tuna fish entered the Japanese markets before the radioactive contamination was discovered. This situation created a media furor claiming that it was another U.S. atomic attack on Japan, and anti-nuclear peace movements spread throughout the country.

[8] “(…) ポピュラー・カルチャーの「非政治性」を前提にせずに問題に対処することが求められる.”
[9] “「女「いやねぇ。原子マグロだ放射能雨だ、その上今度はゴジラときたわ。もし東京湾にでもあがりこんできたらいったいどうなるの」男 A「まず真っ先に、きみなんか狙われるクチだね」女「ウン…! やなこった。せっかく長崎の原爆から命拾いしてきた、大切な身体なんだもの…」男 B「そろそろ疎開先でも探すとするかな」女「あたしにもどっか探しといてよ」男 A「あーあ。また疎開か。まったく嫌だなぁ」.”

The peace movements would be made primarily by women in Suginami Ward in Tokyo. In Hiroshima, on April 21, 1954, regional women's organization mobilized the Hiroshima Branch of Women and Youth Section, which worked with Hiroshima's citizens to petition the committee. "This committee, which eventually became the local Gensuikyo branch, organized a mass meeting on August 6, 1954, and was instrumental in bringing the first Gensuikyo Congress to Hiroshima the following year." (Zwigenberg, 2014, p.99). In 1955, Hiroshima hosted a congress against hydrogen and atomic bombs called *Gensuikyo.* The organization of anti-nuclear movements was partly due to the participation of women that were mothers, *hibakusha*, and teachers that were members of the Japanese Teachers Union. "The activity of women teachers and the leftist Japanese Teachers Union (JTU) was extremely important in this regard. The anti-nuclear movement saw the rise of a new generation of female activists." (Zwigenberg, 2014, p.97).

These protests also happened due to the Korean War (1950-1953) backdrop since the US allowed the formation of the National Police Reserve of Japan to fill the country's military vacuum. Subsequently, the Chinese intervention and the threat of Soviet participation in the war prompted "(…) the reinstatement of Japanese former officers and preparing for greater combat capability as a Defense Force." (Kuzuhara, 2006, p.115). This alliance was codified in the Security Treaty Between the United States and Japan, signed in 1951, and revised in 1960. The treaty was organized so that the US could maintain armed forces in Japan to protect the country. "Japan's foremost goal was economic rehabilitation, it would avoid involvement in international strategic issues, and it would rely on the US for its security." (Feske, 1997, p.431). In such a scenario, the rational appeal for peace had to be grounded in an extremely practical awareness of the issue, which was clearly critical of the Japanese government's aggressive rearmament efforts and of America's intensification of the Cold War.

The movie *Children of Hiroshima* (原爆の子, *Genbaku no ko,* dir. Shindō Kaneto, 1952) gave a detailed account of the tragic aftermath of the atomic bombing impact in Hiroshima especially focusing on children. However, the movie did not satisfy the Japan Teachers Union, which had commissioned the film. "The union criticized Shindō's film as lacking sufficient power to convey the brutality of the bomb." (Shibata, 2018, p.46). Contrarily, Hideo Sekikawa's movie *Hiroshima* was made in 1953 and is filled with scenes of desolation and brutality and a vocal denunciation of the US atomic bombings. However, their apparent emotional appeal also led to

harsh criticism, especially since movies about nuclear bombings should not be against any country. Instead, it should be a prayer to all humanity.

In post-war society, it was believed that Japan entered the wrong war because of its pre-modern characteristics. “In the field of film criticism, it can be said that the awareness of the problem of Japan’s pre-modernism emerged as criticism of drama production that emphasized making people cry. The word used in this criticism was sentimental.” (Morishita, 2016, p.40, my translation [10]). This criticism of sentimentalism and the quality of political representation led to a very harsh reception of *Godzilla* in Japan.

> Godzilla is absurd in every respect. There is no fun in the deduction. (…) Godzilla is the offspring of a whale and a gorilla, but I think this is an awful setting for an old Chinese or Indian tale. It would have been better to incorporate the mysteries of biology more skillfully. It’s not necessarily a bad idea to think of a monster emerging from the ocean floor after repeated hydrogen bomb tests. And the sense of naming it “Godzilla” is not interesting. (Ara, 1956, p.44-45, my translation[11])

Masahito Ara was a literary critic that first theorized about *Godzilla* and the subsequent monster movies. At first, he defined the genre as (空想科学映画, *Kūsō Kagaku Eiga*), that is, *imaginative science film*, a similar concept to science fiction (SF). His position was that the depiction of Godzilla was too unscientific, failing to incorporate fundamental biological factors. In contrast, the reception of *Giant Monster of the Sky Rodan* (空の大怪獣 ラドン, *Sora no Daikaijū Radon*, 1956) was more positive. The movie had elements of an entertainment film but still was seen as a movie that went beyond spectacle and criticized civilization. Since *Rodan* emerged from the coal mines in the Kyushu region, due to the crustal movement, it was seen as a more scientific and hopeful depiction than Godzilla. So, the dynamics between entertainment and the critical political instance were discussed at the heart of the genre from the beginning, even before the term, *Tokusatsu* appeared. “In general, the dissemination of scientific knowledge is extremely weak, and healthy curiosity is not that common. In the present situation, if we

[10] “映画批判という分野では、日本の前近代性を問題にする意識が「泣かせ」を重視したドラマ作りへの批判として現れた、と言えるだろ。その際に用いられた批判の言葉が、「センチメンタル」、あるいは「感傷的」だった.”
[11] “『ゴジラ』などは、どの点からみても荒唐無稽である。推理の面白さなどない。(...) ゴジラは、クジラと ゴリラの合の子だそうだが、中国やインドの昔話ならいざ知らず、この設定は大変まずかったと思う。生物学の謎などもっと巧みに取り入れたほうがよかったのではないか。水素爆弾の実験が繰り返されているうちに、海底からこういう怪物が出現する、という思いつきは必ずしも悪くはない。それに、ゴジラなどという名前をつける感覚が面白くない.”

compromise at such a low rank, it is only natural that we can only film things like *Godzilla*." (Ara, 1956, p.45, my translation[12]).

The conflict between entertainment and political views is present throughout the Godzilla series in Japanese and American adaptations. Embassy Pictures re-edited the *Godzilla* (1954) movie for the American audience, cutting more than thirty minutes of scenes and attaching additional scenes with an American reporter. The film was renamed *Godzilla: King of Monsters* to refer to the movie *King Kong* (1933), and the cuts erased the references to Hiroshima and songs about peace. To sell the film to the US, it had to be stripped of its war commentary. Subsequent monster movies in the sixties also develop more friendly characters, perhaps in an attempt to sell to international markets. "There was a dead-serious *Godzilla* movie. Well before the series degenerated into big-time wrestling in seedy latex suits, well before Godzilla had a laughably unlikely son, (…)." (Tsutsui, 2004, p.13). William Tsutsui refers to the movie *Son of Godzilla* (1967) in his remarks, where he treats the original movie differently than what he sees as more commercial versions of the sixties that had distanced themselves from the postwar discussion.

Additionally, outside of Japan, Godzilla is mostly interpreted as a fighting monster deprived of deep political meaning. One contributing factor is that the American versions of *Godzilla* are far detached from the Japanese context. *Godzilla* (1998), directed by Roland Emmerich, was completely visually separated from Godzilla's usual formal characteristics, utilizing CGI that made the character look closer to an iguana or dinosaur-like figure. However, it did receive intense criticism from international and Japanese audiences that thought the movie was far too distant from its origin. In a more contemporary interpretation, *Shin Godzilla* (シン・ゴジラ, 2016), directed by Hideaki Anno and Shinji Higuchi, received a critical appraisal in Japan Times in the review titled "*Shin Godzilla: The metaphorical monster returns.*[13]" It was interpreted as capturing Japanese political issues at the heart of the movie; since it focuses on how Godzilla reawakens Japan's historical pressing concerns, such as responsibility, use of weapons, and citizen engagement in politics, among other issues. Praised both internationally and domestically, its reception also caused some divisions.

[12] "一般に、科学知識の普及が極めて弱く、また、健全な好奇心もそれほど一般化してない。そういう現状に低い点で妥協すれば、ゴジラのような写真が撮れるのは当然です."

[13] Schilling, Mark. (2016) *Shin Godzilla: The metaphorical monster returns*. Japan Times. For the complete review, see https://www.japantimes.co.jp/culture/2016/08/03/films/film-reviews/shin-godzilla-metaphorical-monster-returns/ (Accessed 8: February 2022).

> It's choppy and full of special effects that seem deliberately designed not to impress — except when they do. The story is so sketchy that it's hard to follow, with a blizzard of characters and cameos that presumably mean more to a Japanese audience than to an American one. The film is at its best when it's in parody mode, though it keeps that card too close to the vest for much of its two-hour length. The humor, not the monster, is what you're left wanting more of. (Genzlinger, 2016 [14])

The New York Times review highlights how the special effects using CGI are "designed not to impress," a sign of the difference in aesthetic treatment related to the long history of establishing tokusatsu effects; however, they can also be remarkable. It gives a homage to leaving room to perceive the materiality of the visual effects without trying to absorb the audience completely. However, what is striking is that *it is the humor* and not the monster that is missed. From the start, the American public has been used to a less political version of Godzilla, and perhaps that established different expectations or erasure of meanings. However, this also points to the historical perception of Sci-fi movies as entertainment, which does not necessarily need to be political or touch upon critical statements. However, to assume that even what is assumed as plain entertainment does not have a political and social function is an oversight.

Generally, even though these examples are distant in time, they show that postwar descriptions of Japan are indeed, in many ways, inseparable from the American efforts to define what Japan was throughout the reinstatement of the country's sovereignty. It also shows how the country strived to reconstruct itself under internal and international pressures. That is why the dynamics of entertainment and politics play an essential role in the *tokusatsu* genre formation and largely in other media formations that followed.

One influential book in this regard was *The Chrysanthemum and the Sword: Patterns of Japanese Culture* (1946) by Ruth Benedict, where many cultural inferences and distinctions were marked, such as the *guilt culture* of the United States and the *shame culture* in Japan. From that point onwards, the placement and construction of Japan and the Other, the West, has assumed many forms. "What it means to be a modern, advanced, civilized state is changing, and these expectations have long affected Japan and will continue to do so. Similarly, there was never a pure

[14] Genzlinger, Neil. (2016) *Review: 'Godzilla' Returns, Again, With a Wink*. The New York Times, October 2016. Available at: https://www nytimes.com/2016/10/11/movies/shin-godzilla-review html (Accessed 8: February 2022).

Japan that somehow sat outside of, or unaffected by, the rest of the world." (Leheny, 2011, p.367). However, this does not mean that Japan hasn't carved its own space, pushing for soft power, and creating a cultural appeal.

The challenging contradictions in popular culture and its political framework need to be brought to awareness so it can be possible to understand how politics can suddenly be out of the image or suddenly be pressed forward. In perceiving such movements within artworks, it can be possible to comprehend cultural negotiations between the aesthetic and social dimensions and how ultimately, artists and collaborators involved in art production faced such challenges.

1.2. Defining Tokusatsu genre

Tokusatsu (特撮) is an abbreviation term derived from *Tokushu Satsuei* (特殊撮影), meaning *special effects*. The term *tokusatsu* evolved from works that used special techniques to create images that could not be filmed using only a camera and natural scenery or a standard set. The term that started to refer to a group of special techniques has developed significantly from its original meaning in film and television history, establishing a significant genre of film works created in Japan. Notably, it embraces analog techniques based on miniature sets, optical technology, and composition before introducing digital technologies and 3D CGI techniques. In contemporary artworks, mainly in live-action and animation, there is a significant shift from analog techniques to digital forms worldwide to expand the range of aesthetic possibilities and reduce costs. The question about how to represent a fictional character to achieve a sense of realism sets a different number of composition solutions in the moving image, depending on the available technology.

Because of the genre's appeal, many tokusatsu characters and imagery have been promoted as the main character, much more than its human actors. To make their existence as accurate or real as possible for the audience, the monsters and other creatures were created as if they were connected to something real: social conditions, scientific conundrums, etc. In that sense, they can become anthropomorphic, and cultural and social concerns can take concrete form as a monster (怪獣, *Kaijū*) or villains (怪人, *Kaijin*). As such, they possess an ambiguity of being fictional beings that could never exist in reality, but at the same time, *they remain real beings*. Godzilla became the first tokusatsu character to be widely recognized by the public. During the 1950s and the 1960s, the golden age of Japanese films was established following the *zeitgeist* of the scientific era, rapid economic growth, and future-oriented fiction. In Japan, animation evolved in film and television media, largely influenced by Manga production, while establishing a close relationship of rivalry with tokusatsu shows. However, until the 1970s, there was not much difference between

media forms, as they all were grouped under the umbrella term *Terebi Manga* (テレビ漫画), which was considered part of the entertainment industry at large[15].

The dynamics of the genre formation started between Literature, Cinema, and Science Fiction. As mentioned, at first, the new monster movies were defined as *imaginative science film* (空像科学映画). Ara Masahito published the article "*Kūsō Kagaku Eiga-Ron*" (空想科学映画論, *Imaginative Science Film Theory*) in the film magazine *Kinema Junpō* (1956). The term *tokusatsu* appeared in magazines dedicated to materials that were being used to make the special effects. In 1958, Takeshi Kōno published a short article called "*Tokusatsu ni tsukawareta purasuchikku"* (特撮に使われたプラスチック, *Plastics used in Tokusatsu*, pp.42-43), published in a magazine dedicated to rubber technology, called *Gomu jōhō* (ゴム情報). The article explores how to source rubber materials, and it also highlights Kōno's experience with discovering how to utilize and craft the rubber in the making of Godzilla's suit.

In a sense, the terms *Imaginative Science Film* (空想科学映画) and *Tokusatsu Film* (特撮映画) coexisted as authors were trying to name and identify this genre's characteristics. In 1961, the article *Sōzō Kagaku Eiga 'Dai Kaijū Motsura' Tokusatsu tantō no Tsuburaya-gumi* (想像科学映画「大怪獣モツラ」特撮担当の円谷組) was published in *Kinema Junpō* (1961), with a picture of the *Mothra* movie set and an explanation about the film, utilizing both terms interchangeably to explain its genre. In 1962, the article *Tokusatsu Eiga no suchīruman* (特撮映画のスチールマン) was published in the Yomiuri Weekly, already utilizing the *tokusatsu* term. Averagely, the term tokusatsu started appearing at the end of the 50s and became an established term around 1960-1970s. One factor that contributed to the genre's development was its expansion to television following Tsuburaya Pro's launching of the television series *Ultraman* (1966). In the opening scene, the *Ultraman* logo is followed by the term '空想特撮シリーズ', that is, *Imaginative Tokusatsu Series*. In a sense, it is the joined acronym of the two terms being used until then to describe the genre. In the 2022 movie *Shin Ultraman*, the opening credits also start with the term '空想特撮シリーズ,' after the main movie title, paying a sort of homage to this period.

[15] In the 1960s, manga originals were the most common art form accounting for 50%, and animation original works accounted for 42%. The changes in numbers throughout the years and the influence of video games change this scenario by the 80's forward. See Masuda, N., Azuma S., et al. (2013).

One element that characterized the DIY quality of tokusatsu was that many artists from different fields contributed to the genre, from design, physical effects utilizing plaster and carpentry, sculpture and molding, wire and manipulation, backdrop painting, electrical and lighting effects, camera workers, etc. These artists created movies, adapted available materials, and developed their techniques and aesthetic ideas with few resources. Instead of calling it the English term Special Effects, I decided to utilize the term *Tokusatsu* because it contains a distinct nuance.

Tokusatsu defines and describes the visual techniques used to make films but also defines a genre within science fiction and fantasy that roughly includes the depiction of monsters and heroes. Its technical aspect also embodies its movie genre. Hajime Matsumoto's description of why the term *Tokusatsu* was groundbreaking instead of utilizing English terms helps understand the formation of the genre. "The term SFX became popular due to the influence of the booming US film industry, such as *Star Wars* (1977), but it didn't quite fit, and when is replaced with the Japanese term tokusatsu, I was struck by what I saw. Yes, it is *tokusatsu*." (Iizuka; Matsumoto, 2016, p.16, my translation[16]).

Because in *Tokusatsu*, DIY expertise was a necessary skill to build miniatures and all kinds of mechanisms, the term embodied the particularity of the Japanese cultural background. Tokusatsu defined special effects as image composition with any material that might work with low or high technology. With the anime consolidation at the end of the 70s and the beginning of the 80s, specialized magazines about both genres started appearing. The Tokusatsu genre also started to become more precise in its denominations, with sub-genres appearing, such as *Super Sentai Series* and *Metal Hero* series. However, before exploring the tokusatsu branches, this research will focus on the development of its art techniques and look from the angle of some of its core art pioneers.

[16] "当時ブームとなっていた米えいが「スター・ウオーズ」（77年）などの影響により、SFXという言葉が流行ったが、これにはどうもしっくりいかず、日本語の「特撮」に置き換えたとき、何がビビツときた。そうだ、特撮だ."

1.3. DIY Art Techniques and Tokusatsu Art Pioneers

The relationship between cinema and animation always foregrounded the history of moving images since they shared technical similarities and were shown side by side in many exhibitions. The moving image technology appeared at the end of the nineteenth century and was used to capture images and play with the gap between them. Optical toys and animated strips were pervasive – Emile Reynaud projected a moving strip of images using the Praxinoscope in 1892 to an audience, three years before Lumière's premiere; *Humorous Phases of Funny Faces* by Stuart Blackton, credited as the first animation, was released in 1906 – and trick films and effects were used in a variety of movies, such as *The House of the Devil* (*Le Manoir du diable*, 1896), *The Man with the Rubber Head L'homme à la tête de caoutchouc* (*L'homme à la tête de caoutchouc*, 1901) by Georges Méliès and later in the mingle of animation and cinema in John Bray's first film, *Artist's Dream* (1913). In such an intersectional beginning, we should engage with Kristin Tompson's question: "Perhaps it is not coincidental that the decline of the novelty effect in live-action films coincided historically with the commercial beginning of animation." (Thompson, 1980, p.109). Thompson argued that the regular exhibition of animation among live-action reminded the audience constantly of the motion picture apparatus magic.

In this sense, in the beginning, animation and the so-called *trick movies* shared a common space because they shared a particular fascination with movement and a pronounced taste for mix-ups, surprises, and similar technical procedures. The similarity was between the techniques, such as stop-camera and frame-by-frame compositions. The ability to stop the camera and control frame-by-frame allowed sudden appearances and disappearances while the actors remained frozen, and objects could be manipulated. These *tricks films* astonished audiences, but within time, their novelty faded, and the popularity of animation spiked. George Méliès placed great importance on the novelty in cinema and responded to the revelation of filmmaking techniques in the public press, done by Gustave Babin in a series of articles published in *L'Illustration* in 1908. "You destroy the fruits of your own labor since you have destroyed the illusion that was your whole goal in composing the *trick*. (…). Nothing is more difficult than *the perfect and artistic execution of a well-tricked view*." (Méliès *cited in* Solomon, 2010, p.57). In a sense, a trick, or what can be called

image composition, could mimic reality, and hide its technique, but it could also be revealed or even have its engendering as part of the image appeal.

Similar to Méliès, Makino Shōzō also used trick films techniques such as cut-out and multiple exposures in his films depicting *Ninjutsu*, or martial arts. Tsuburaya Eiji is said to have acquired trick photography technology that is the basis of Makino Shōzō movies under Edamasa Yoshirō. Still, at the same time, he also inherited an appreciation of realism. In his debut as a cameraman in *Chigo no Kenpō* (稚児の剣法, 1927), directed by Minoru Inuzuka, his efforts with realism backfired because the main character's face was captured in such a deep and realistic manner that it was criticized at the time.

As special effects and animation techniques were being developed, new modes of constructing images and portraying characters started to appear. In 1933 *King Kong*, produced by RKO Films, was released; as Willis H. O'Brien's first giant monster movie that used stop-motion animation to bring the giant ape to life. This impressed young Tsuburaya, who analyzed the film frame by frame with a magnifying glass and studied every shot, including King Kong's movements. When he joined Nikkatsu Studios, Tsuburaya continued his research on the *screen process*, which had already been implemented in Hollywood, to incorporate it into Japanese films. According to Satō (2021, p.127), Tsuburaya published a research paper entitled 'スクリーン・バックに就いて附、私の実験報告' (*Sukurīn bakku ni tsuite fu, watashi no jikken hōkoku*, *Supplementary to the screen back, my experimental report*, June 1933) in the Photo Times magazine.

> There are deserts, oceans, the highest peaks of the Alps, the beast-infested depths of Africa, Antarctica, the North Pole, etc. On the other hand, in rare cases, the author creates a story based on his imagination, depicting the moon world or the universe passing by outside the window of a rocket traveling to Mars, *which may or may not be realized in decades or centuries to come*. (Tsuburaya *cited in* Satō, 2021, p.127, my translation[17])

Although Tsuburaya was a cameraman, he developed various techniques to depict his subjects, such as using high-intensity arc lights, large fans to recreate rainstorms, and smoke to make the scene's atmosphere more realistic. In this sense, he wanted to create images that were

[17] "沙漠、海上、アルプスの最高峰、猛獣の棲息するアフリカの奥地、南極、北極等々。そうかと思うと稀には月世界や、火星旅行のロケットの窓外を流れ過ぎる宇宙の有様など、何十年何百年後に実現されるか知れたものではない場合を、作者は勝手な、自己の想像力から描き出して物語を成立さしてしまう."

thought impossible at the time. Before his stardom in Tokusatsu making, Tsuburaya worked in many different movie productions developing these techniques. The intrinsic relationship between trick film techniques, animation, and early special effects can be seen in Japan around the 1930s.

Kenzō Masaoka and Eiji Tsuburaya were active at a time when animation and special effects were not yet as differentiated as they are in contemporary terms. Kenzō Masaoka, known as the *father of Japanese animation*, and Eiji Tsuburaya, known as the *father of special effects*, are not only close in age but also have been involved in the production of the movie *Kaguya Hime* (かぐや姫, 1935) directed by Yoshitsugu Tanaka by J.O Studios. Tsuburaya was in charge of the movie cinematography, and Masaoka was in charge of miniature production and photography. Tsuburaya joined J.O. Studios in 1934, while Masaoka had a studio in Kyoto and was involved in the company's productions. After the first screening, the movie *Kaguya Hime* was considered lost but suddenly discovered in 2015 in England. Subsequently, the National Film Archive of Japan held a special screening in Japan, besides featuring in the special exhibition named *Eiji Tsuburaya: On the 120th Anniversary of His Birth*[18] (生誕 120 年円谷英二展), held from 17th of August to November 23th, 2021.

As the story goes, in 1936, the Japan Society of the United Kingdom organized a screening to introduce Japanese culture in England. With the cooperation of the Japanese government, *Kaguya Hime* was selected. To exhibit the movie in England, they prepared a short version, downsizing the original 75 minutes to 33 minutes, including an English synopsis and staff credits. "For this reason, the shortened version does not include the puppet animation scene and the miniature set of Rashomon that Masaoka was in charge of." (Yukari, 2021, p.138, my translation[19]). On the occasion of the release of *Kaguya Hime*, Kenzō Masaoka wrote an article for Kinema Junpō titled '*Miniechua no seisaku to satsuei ni tsuite'* (ミニエチュアの製作と撮影について, *On the Production and Filming of Miniatures*, 1935, p.78). The report contains a picture of the movie set, including the *Rashomon* gate, and it highlights that the tricks, such as the use of miniature, are what make the magic of movies.

"For example, in *Kaguya Hime*, the script says that "an ox cart will run like a gale," but when it is doubtful whether a real cow will run as ordered, a certain safer method is to have a

[18] For more details about the exhibition, see: https://www nfaj.go.jp/exhibition/tsuburaya120/ (Accessed: 2 February 2022).
[19] "そのため、政岡が担当したという人形アニメーションのシーンや、ミニチュアセットによる羅生門の映像は、短縮版には収録されていない."

puppet cow run." (Masaoka, 1935, p.78, my translation[20]). That's the description of *Kaguya Hime* scene script that mentions cow, so Masaoka decided to use stop-animation to compose this scene. "Masaoka was the one who actually set up and photographed the dolls. However, the dolls themselves were created by the sculptor Asano Mofu (real name: Takeo Asano)." (Yukari, 2021, p.139, my translation[21]). Asano Mōfu was a sculptor active in the avant-garde art movement, especially Futurism, in the early Shōwa period. He was involved in pioneering puppet shows in the Kansai region, working with stage sets for plays and puppet production. Additionally, he was a leader in the proletarian art movement in Osaka, encouraging independent artwork production. Subsequently, Asano Mōfu also helped make miniatures, sets, and special effects with Tsuburaya.

"At Tsuburaya's request, Asano went to Tokyo to participate in the filming of *The Battle of Malaya, Hawaii* and was accompanied by Teizo Toshimitsu. In fact, Toshimitsu had joined the Osaka Ningyo-za, a puppet theater company founded by Asano." (Hagiwara, 2021, p.140, my translation[22]). In 2018, it was discovered that a stage curtain for the Osaka Ningyo-za, an emerging puppet theater company that existed in 1935, survived the second world war period[23]. The stage curtain design was made by Teizō Toshimitsu (1909-82), who would late help design *Godzilla*. In this sense, the traditional puppet theater known as *Bunraku* and the *Kabuki theater,* a form of dance/performance made by actors, influenced tokusatsu techniques and mechanisms used in action scenes and the combat choreographed movements that would appear later in the *Super Sentai series*.

In 1937, Photo Chemical Laboratory, P.C.L. filmmaking studio, Tōhō Eiga distribution, and J.O Studio merged to form Toho Studios. Tsuburaya then joined Toho in Tokyo and was put in charge of the Special Effects Division (特殊技術課, *Tokushu gijutsu-ka*), the first section to specialize in special effects in the Japanese film industry. The Special Effects Division helped form special effects artists. Examples include Tomio Sagisu (also known as Sōji Ushio), who later

[20] "「かぐや姫」のように、脚本には「一臺の牛車が疾風の様に走る」と書いてあるのだが、そう注文どおりほんものの牛が走ってくれるかどうか甚だ疑しい場合、それより安全確實な方法として人形の牛で走らせる事等(…)."

[21] "実際に人形をセットして撮影したのは政岡である。だが人形そのものは彫刻家の浅野孟府（本名・浅野猛夫）が作成している."

[22] "浅野は円谷に請われて『ハワイ・マレー沖海戦 』の撮影に参加すべく上京するが、その際に利光貞三を伴っている。浅野が立ち上げた人形劇団の大阪人形座に、実は利光も加わっていたのである."

[23] News of the discovery was published in the online journal Voice of Nara (ニュース「奈良の声」). See: Asano, Eiko (浅野,詠子). (2018). *Gojira zōkei-sha Toshimitsu Teizō ga moji dezain no donchō, senka nogare genson 12 tsuki 1-nichi, Ōsaka fukitashi de no ningyō geki kōen de tenji*. (ゴジラ造形者利光貞三が文字デザインの緞帳、戦禍逃れ現存 12 月 1 日、大阪・吹田市での人形劇公演で展示). Published: 12 November 2018. Available at: http://voiceofnara.jp/20181112-news619 html (Accessed: 2 March 2022).

would launch his company P. Productions and produce *Ambassador Magma* (1966-1967), one of the first tokusatsu shows that aired in the US with the name *The Space Giants*; and Keiji Kawakami, who would become the special effects director for *Ultra Q* (1966) in Tsuburaya Productions, among many others. Meanwhile, in 1965, Nobuo Yajima and Katsuro Onōe established the Tokusatsu Research Institute (特撮研究所, *Tokusatsu kenkyū-jo*), with Hiroshi Butsuda as a representative, within the premises of Toei Studios in Tokyo.

Going back to Tsuburaya, in 1944, he produced the *Katō Hayabusa Combat Team* (加藤隼戦闘, *Katō Hayabusa sentōtai*) sponsored by the Ministry of the Army (1872-1945). "As miniature buildings exploded one after another, a composite of people fleeing in moving masks was created, and the visuals were breathtaking as if they were caught in the middle." (Satō, 2021, p.132, my translation[24]). After the war, in 1948, Tsuburaya was banned from working at Toho Studios because of his involvement in war propaganda movies, but he returned to work in 1952. In an interview, Masao Yagi (八木 正夫, 1926-2008), a sculptor that helped in the *Godzilla* film, points to how the war and tokusatsu development went hand in hand.

> After the attack on Pearl Harbor, we were asked to make a film about it, and the first project we came up with was "The Battle of Hawaii and Malaya" in 1932. It was from this film that *tokusatsu* came into focus. In other words, the war and the improvement of special effects technology went hand in hand. (Tokusatsu Eiga Kenkyūkai, 2002, p.13, my translation[25])

Years after the war, Toho was planning to produce a Japanese and Indonesian co-production film about the aftermath of the Japanese occupation of the Dutch East Indies (now Indonesia). However, the producer, Tomoyuki Tanaka, could not secure the movie deal with Indonesia due to political conflict. Inspired by the success of the re-release of *King Kong* (1952) and the release of *The Beast from 20,000 Fathoms* (1953), followed by the political discussion regarding nuclear power in Japan, Tanaka started devising an idea to produce a monster movie that

[24] "ミニチュアの建物が次々と爆発するなか、移動マスクで逃げ惑う人々を合成、彼らが巻き込まれているかのような迫真のヴィジュアルが展開した."

[25] "真珠湾攻撃があって、それを題材にした映画を撮ってということになったんだけど、結局、最初にできたのが、昭和 7 年（4 年）の『ハワイ・マレー沖海戦」（註 8）という企画。この映画から特撮というのがクローズアップされたんだよ。つまり、戦争と特撮技術の向上は一緒になっているんですよ."

initially was called *Project G*. After successfully pitching the movie idea to executive Iwao Mori, the director Ishirō Honda and Eiji Tsuburaya joined the project. In a way, *Godzilla* would be a DIY catalyst to start the creation of special effects/tokusatsu divisions in other movie studios across the country. Masao Yagi, in the same interview, remembers how a giant rubber crocodile inspired Tsuburaya to use the material.

> When Toho purchased a Mitchell film camera from the U.S., they were also sold a giant rubber crocodile used in Tarzan. I think it was about 10 meters long. The crocodile was left at Toho's second studio. It was sitting on the side of the stage in the rain. When Tsuburaya-san saw the rubber crocodile, he wondered if he could make something monstrous or dinosaur-like with this material, and that's how we started. (Tokusatsu Eiga Kenkyūkai, 2002, p.18-19, my translation[26])

Godzilla's drawing was first created by Wasuke Abe (阿部, 和助), Akira Watanabe made the design, Teizo Toshimitsu made the clay prototype, and the modeling staff involved included the brothers Yasuei (八木, 康栄) and Kanju Yagi (八木, 勘寿), Kanju's son Masao Yagi (八木, 正夫), and Eizō Kaimai. Tsuburaya Eiji granted an interview in the magazine *Go-Nen no Gakushū* (５年の学習, 1956) with other creators of the time. Tsuburaya described in the interview the process of developing Godzilla's design, which meant that it should be close to a scientific approach and a creature that children would be afraid of. "Immediately, I gathered the children and listened to everyone's thoughts. Then they said Mr. Wasuke Abe's painting was the scariest one, so I went to Mr. Abe's house and consulted with him." (Go-Nen no Gakushū, 1956, p.34, my translation[27]). After that, Tsuburaya brought the drawings to Tokyo, and everyone started to develop the design and how to construct it. However, one of their problems was that the source materials were unavailable then.

Eizō Kaimai describes that acquiring rubber was difficult, so they contacted Mr. Takeshi Kōno, a rubber engineer: "At that time, Yokohama Rubber had an engineer specializing in rubber,

[26] "前に東宝がアメリカからミッチェルという撮影機を購入した時、抱き合わせでターザン(映画)に使ったゴム製の巨大なワニを売りつけられたんですよ。大きさは確か 10 メートルくらいのやつ…それが東宝の第 2 撮影所に ほっぽってあったんですよ。もうステージの脇に……雨に打たれながら。そのゴム製のワニを見て、円谷さんがこの材質で何かモンス ター的な、恐竜的なものができないかな、と いうことで、まずスタートしたわけなのです."

[27] "さっそく、こどもさんをあかんがつめて、みんなの考えをききました。そしたら、阿部和助さんの絵が、いちばん、こわい絵だというので、私はさっそく阿部さんの家へ行って、どうしたらよいかおそうだんしました."

Mr. Kōno (Takeshi). Toho invited him and held a meeting with just us (the molding team). Then, Mr. Kōno said, 'If you give me the budget, I will go to America and find good materials.' So, Mr. Kōno went to America." (Tokusatsu Eiga Kenkyūkai, 2002, p.20, my translation[28]). For Godzilla's construction, the first step was to use a wire mesh as a base to give the outline and then paste paper on top of it to mold Godzilla's form. Afterward, they use cotton wrapped with cloth to provide a shape outline. Finally, softer fabric is placed over the surface, and the wire mesh is pulled out of the sculpture. After Mr. Kōno came with the materials, they had to build a kiln in the studio to *cook* the rubber put on Godzilla's surface. The result was a *suitmation* of 80kg, making moving inside of it a challenge. For that reason, they had to cut the original suit in half to shoot the scenes according to the camera angle while they prepared a second lighter version to be used.

Takeshi Kōno (1958) wrote the already mentioned article about the uses of plastic in tokusatsu. He then describes being consulted about the possibility of using materials like rubber to help make the Godzilla suit. First, he was presented with a model created by Tsuburaya's team, which he recalls having a similar face to *King Kong*. Since nothing like that had been made in Japan before, Kōno thought using rubber for the suit wouldn't be possible. However, after further inspection, he decided to help the Toho staff. "The plastigel was purchased from M-Chemistry, and we decided to use it after further preparation. A heating furnace with nichrome wires was built in the studio. In this furnace, Godzilla made of plastigel was put into the furnace for heat treatment." (Kōno, 1958, p.42, my translation[29]). After that, Kōno also helped with materials for the sequence movie *Godzilla Strikes Back* (1955). From that point onwards, Kōno would provide consulting services to acquire and help acquire any materials that could be made into a monster.

Sourcing the Godzilla rubber-like texture material was only the beginning of this tokusatsu movie's challenging nature. Eizō Kaimai describes how in the first *Godzilla* (1954), the eyes were drawn in a wooden ball and attached to the suit because they did not have control systems. So, to give the appearance of liveness, they had to wet the eyes and put a light focusing on the eyeball to make it shimmer from cut to cut (Hikawa et al., 2014, p.21). For *Godzilla Strikes Back* (1955), Eizō Kaimai, in an interview with director Haraguchi Shinji, describes how he wanted to develop

[28] "じゃあどうしようかという時 に、横浜ゴムに河野さんというゴム専門の技 師さんがいたわけですよ。東宝もその人を呼んで我々 (造型班) だけで会議を開いたわけ。そうしたら河野さんが「予算出してくれたら、私がアメリカに行っていい材料を見つけてく る」って言うんだよ。で、河野さんはアメリカ行ったのよ."

[29] "プラスチゲルは M 化学のもを購入し、これを更に調合して使用 することにした。撮影所のなかに、ニクロム線を配した加熱炉がつくられた。このなかにプラスチゲル製のゴジラを入れて加熱処理しようという訳で ある."

a mechanism to make Godzilla's eyes more alive, so first, he tried using a *koto* string (a stringent instrument known as the Japanese harp). Still, since it would break easily, the following solution was to use a bicycle brake wire that he had to manipulate to create movement.

> Kaimai: Yes. So, when I did the lip-synch, I bought a wire from the bicycle shop in front of Toho. Before that, I didn't know about such wires, so I went to a shamisen shop in Sangenjaya, bought some koto strings that I adapted, and then pulled them from behind. I did that at first, but since it was a koto string, it would break. So, I went to the bicycle shop to see if there was anything better, and they said they had it. So, I bought the wire...
> Haraguchi: It was a bicycle brake wire! (Hikawa et al., 2014, p.21, my translation[30])

Godzilla (1954) claws were made of wood since other materials were scarce. Additionally, they had to insert boots inside the suit so the actor could move, but since there were no boots in shoe shops, Kaimai had to get boots at the local fish market. For the suit, there was no urethane or zipper on the back. Instead, they had to make an opening about two centimeters long with an inside hook where the actor could close the suit. The idea was inspired by a *tabi*[31] shoe with a metal hook called *kohaze*. Additionally, most of the sculptors and designers in the movie had a contract with Toho and worked as freelance workers on a movie-to-movie basis. They also had part-time students from the sculpture course of Tama Art University and architecture course from Waseda University helping as assistants.

> Haraguchi: So, it's no exaggeration to say that a group of freelancers created the first *Godzilla*. Kaimai: Mr. Toshimitsu and Mr. Yagi had a one-time contract, and his son and I were temporary workers. We worked one day as temporary workers for 400 yen (laughs). (Hikawa et al., 2014, p.29, my translation[32])

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[30] "開米: ええ。それで、ロパクするときは、東宝の前の自転車屋からワイヤーを買ってきて、そのワイヤーを 買ってきてやったんですけどね。その前は、そんなワイヤーなんて知らないからさ、三軒茶屋の三味線屋へ行って、琴の糸あるじゃないですか、あれを買ってきて作って、それで、私が後ろから引っ張ってたんですよ。用意スタートで、アップのときにね。それを最初はやってたんだけど、やっぱり、琴の糸だから、切れちゃうわけですよね。それで、何かいいのねえかなって、自転車屋に行ったら「ある」っていうんですよ。それで、そのワイヤーを…
原口: 自転車のブレーキのワイヤーだ!"

[31] *Tabi* are traditional Japanese split-toe shoes from the fifteenth century and are worn as socks in more contemporary forms. *Kohaze* is the name of the internal metal hook that closes it.

[32] "原口: ということは、やっぱり最初の『ゴジラ』は、フリーが集まって彼らの力でできてるって言っても過言じゃないんですね。開米: 利光さんと八木さんは 1 本契約で, 八木さんの息子と私は臨時雇いなんです。臨時で 1 日働いて, 400 円だった(笑)."

Because of the experimental DIY characteristic of developing new techniques, they hire students from art disciplines as assistants to collaborate and discover novelty solutions. One area that had further development was the creation of miniatures in scale to the monster. Miniatures had to be made so that they could be used for live-action shooting and could also work later when the optical composition was used to integrate the animated effects in the footage. One of the miniature pioneers that later became the right man for Tsuburaya was Yasuyuki Inoue (井上, 泰幸, 1922-2012).

Yasuyuki Inoue, served in the Imperial Japanese Navy Sasebo Marine Corps in 1944 and was injured in a battle in China, losing part of his left leg. After the Second World War ended, in the need of finding a job, he decided to join the Disabled Veteran Center in Kokura (小倉の傷痍軍人補導所), where he started learning furniture making. After moving to Tokyo in the Setagaya ward, Inoue made friends with his neighbors. Inoue entered Nihon University College of Art, where he studied under Iwao Yamawaki, an architect and photographer that studied at Bauhaus in Germany before the war. In an extraordinary coincidence, in 1952, he lived around 200 meters from Shin Tōhō. Inoue was invited to assist in the miniature making of movies such as *The Fire at Edo Castle* (春色お伝の方江戸城炎上, *Haruiro oden no kata: Edojō enjō*, 1954) and *Submarine Rogo: Still No Surfacing* (潜水艦ろ号未だ浮上せず, *Sensuikan rogō imada fujōsezu*, 1954). After that, Inoue was transferred to Tōhō studios to help Akira Watanabe, Teizo Toshimitsu, and Irie Yoshio with the art direction of *Godzilla*. At Tōhō studios, Inoue meticulously planned the miniature scale and took photographs and measurements of actual location sites.

> We all went out to take pictures of the National Diet Building and the Ginza area for the model drawings. We checked every little detail, from sidewalks and streetlights to telephone poles, and to get the height of the buildings right, we had female assistants stand in front of the buildings with black-and-white painted measuring sticks and take pictures from different angles. (Kinema Junpō, 2012, p.67, my translation[33])

[33] "私は模型図面制作のため、みんなで国会議事堂と銀座周辺の写真を撮りに出かけました。歩道や街灯、電柱に至るまで、あらゆる細かいディテールをチェックし、建物の高さをきちんと測るため、女性アシスタントに測定用の白黒に塗り分けた棒を持たせて建物の前に立たせ、さまざまなアングルから撮影しました."

To produce the miniatures models according to the actual locations, they utilized a basic scale of 1:25 for the miniatures, adapting the scale depending on the scene. Carpenters built most wooden houses, but the buildings destroyed by Godzilla, such as the Diet Building, were made of plaster. The freelancer's art college students who wanted to become sculptors had gone through trial and error to create a building that could be easily destroyed. Tsuburaya also asked the Yagi brothers, in charge of molding, to build a steel tower model made of wax. They used powerful lights in the wax tower direction to melt due to heat, which was a technique to express the pattern of the tower collapsing due to the heat rays emitted by Godzilla. The effects of the typhoon scene on Odo Island and the waves generated by the destruction of Godzilla's Kachidoki Bridge over the Sumida River were made using a water-dropping device improvised by the tool workers using drums. In sum, the first Godzilla was an experiment since the suitmation and available materials were scarce, but this propelled research to utilize unusual materials. Inoue also helped in *Godzilla's* (1955) sequel, where the fight between Godzilla and Anguirus (the first quadrupedal monster) brought further challenges to the miniature and manipulation team to solve.

> The set of Osaka Port, where Godzilla and Anguirus appear, began with the construction of a temporary swimming pool 25 meters by 25 meters and 70 centimeters deep on the eighth stage, which took about four days to build by a team of about 12 or 13 people working on the construction of the stage equipment. (Kinema Junpō, 2012, p.71, my translation[34])

Inoue would stay at Toho and contribute to movies that were a hallmark of tokusatsu. Inoue was born in Fukuoka, and because the movie *Rodan* (空の大怪獣 ラドン, *Sora no Daikaijū Radon*, 1956) was set in his hometown of Kyushū, his focus on miniatures became even stronger than before. "When Eiji Tsuburaya saw the set after the miniatures were completed, he was astonished: "It looks exactly like the picture!" (Miike, T. et al., 2022, p.54, my translation[35]). Inoue would contribute as an Art Director and miniature maker in movies such as *The Mysterians* (地球

[34] "ゴジラとアンギラスが現れる大阪港のセットは、第 8 ステージに 25 メートル×25 メートル、深さ 70 センチの仮設プールを 12、13 人ほどの大道具の建てこみ班によって 4 日間ほどかけて建てることから始まりました."
[35] "ミニチュアが完成してセットを見た円谷英二は「写真通りじゃないか!?」と驚愕したという."

防衛軍, *Chikyū Bōeigun*, 1957), *The Three Treasures* (日本誕生, *Nippon Tanjō*, 1959), *Mothra* (1961), and so on. He also contributed to *Ultra Q* (1966), never leaving Tsuburaya's side.

After Tsuburaya's passing in the 1970s, Inoue opened his special effects company called *Alpha* (アルファ企画) in Ebina city in 1971. Inoue's shop was capable of doing anything from designing miniature sets to making props, suits, and masks. "Alpha made the suits, props, and masks of the main characters for P Productions' TV series from 1972 to 1975, including *Magic of the Ninja* (1972-73) and *Denjin Zaborger* (*Electroid Zaborger*, 1975); for Sekonsha Productions' *Super Robot Red Baron* (1973-74); and Toho's *Diamond Eye: Warrior of Light* (1973-74)." (Shiraishi, 2022, p.312). Inoue's efforts were towards creating a realistic atmosphere in the sets on the stage. His studies with craft making and architecture made him not only a miniature maker but, in a sense, a *landscape* creator for movies. Inoue makes his artistic position clear to Toshio Miike in this interview:

> Inoue: I never thought I was making miniature models. My goal was always to replicate an actual city and landscape. For instance, I designed the sets for Godzilla assuming to film a real giant creature appearing in real locations, not a rubber suit monster walking on a stage. Even though it was a monster movie, I never treated as a kid suff. (Miike, 2022, p.315)

Another pioneer at that time was Sadao Iizuka (飯塚, 定雄), which in the beginning, did not have much hope in his prospects of having higher education or working with art. Iizuka explains the social situation at that time in an interview with Toshio Miike and Kazuhiro Matsunomoto. "In those days, only about one-third of the students who graduated from junior high school went on to high school. In short, it was a time of poverty, and tuition fees were not affordable." (Hikawa et al., 2014, p.142, my translation[36]). However, Iizuka liked drawing, and he wanted to work part-time, so he joined Toho in the Special Art Department (特殊美術課). Iizuka started helping Yasuyuki Inoue with jobs such as painting miniatures and drawing clouds on the horizon (the background wall used in the studio). In his recounting of that time, Iizuka's first impression of Toho was a surprise: "When I first joined Toho, I was surprised at Tokusatsu…The people who worked on the first *Godzilla* were all either part-time workers or specialized contract

[36] "僕らのころは中学卒業して高校へ進学するのは 3 分の 1 くらいしかいなかったんですよ。要するに貧困の時代だったんで学費もままならない."

technicians, and there were no Toho technicians or employees. I thought, "What is this company?" (Hikawa et al., 2014, p.143, my translation[37]).

In *Godzilla* (1954), another challenge was the creation of the ray effects coming out of Godzilla's mouth. Tsuburaya had already investigated and created working methods with screen processing while devising procedures to create image composition. Hiroshi Mukōyama (向山, 宏) joined Toho in 1940, where he worked on composite productions and composite filming, and in 1954, he was appointed as section chief of the Composition Section (合成課). It has at *Mukōyama Compositing Room* that Iizuka would help with composition work for *Godzilla*.

> When I talk about Composition, I am talking about Mukōyama Composition (Hiroshi Mukōyama was in charge of composition). In short, Matte Composition[38]. The main part of the work was drawing matte pictures and compositing them with the actual main footage. There was a shed on the opposite side of the river from Toho Studios, where there was a compositing room known as the *Mukōyama Composition Room*. When I was working on *Godzilla*, I was asked to help a little after the shooting, which was the compositing room I went to. (Hikawa et al., 2014, p.145, my translation[39])

This was the beginning of Iizuka's work with image composition, which at the time, was just an extension of his part-time job at Toho. At the time of Mukōyama Composition, there was no poster paint (also named tempera paint) available, so they had to use a *Nihonga* pigment material called *suihi sumi* (水干墨), mixed with Arabia glue (アラビア糊) and paint the matte pictures to make the film composition[40]. In a general view, there was a pre-war *Image Composition*

[37] "東宝に初めて入った時に驚いたのは、特撮…最初の『ゴジラ』に関わってる人間は皆アルバイトか、もしくは専門の契約技術者しかいなくて、東宝の技術者や社員がひとりもいない。「何なの、この会社は」って思ったね."

[38] Matte Composition was a composition of two or more images shot separately to create a single image. Generally, the image is shot with blue background, a matte mask is created for the subject area by taking advantage of the blue-bleaching characteristics of black-and-white film, the mask is covered with the background image, and the subject shot with blue background is combined with the inverted side of the mask. Additionally, is important to understand the chemistry that supported this technique. Silver halide crystals in gelatin form part of an emulsion which is used to coat the paper or film, and this emulsion is sensitive to ultraviolet radiation blue light. That is why, they took advantage of the blue-bleaching characteristics of black-and-white film for composition.

[39] "合成といえば向山合成(向山宏)が担当していた合成係)のことでね。要するにマット合成。マット画を描いて実景と合成してたのがメイン。東宝撮影所の川の反対側にひとつ小屋があって、そこに向山合成といわれていた合成室があって。『ゴジラ』の時,「現場が終わったらちょっと手伝って」って言われて行ったところがその合成室だったの."

[40] For more details about the materials and style of uses, see Hikawa et al., 2014, p.145-146. Additionally, poster paint became available in Japan when Optical Composition became more common at Toho Studios.

Department (画合成) and the *Optical Composition Department* (光学合成), institutionalized after Godzilla. These two styles shared the same room, but they had different teams and methodologies.

At the time of Godzilla, the people working at Toho were largely inexperienced in making visual effects for film, as this field was not organized yet in Japan. However, as Iizuka makes clear, this situation changes with *Godzilla Strikes Back* (ゴジラの逆襲, *Gojira no Gyakushū*, 1955). Iizuka says: "At the time of *Godzilla Strikes Back*, we really became a team called *Tokubi* (特美) (Special Effects Art). Half of the group consisted of part-time workers, but all became veterans." (Hikawa et al., 2014, p.144, my translation[41]). As time passed and the staff became more confident, the structure of Toho was also becoming more organized. Iizuka was a part-time worker, but soon he would become a regular employee. Iizuka remembers this period and says: "I was getting excited, and then Tsuburaya called me. It was just before I started working on *The Mysterians* (1957). Tsuburaya said: "I'd like to start working on this kind of work (in which Optical Composition scenes frequently appear), and I think you should do it." (Hikawa et al., 2014, p.144, my translation[42]). Tsuburaya started retaining skillful people and trying to build a *Tokusatsu Optical Composition* methodology.

At first, Iizuka painted together within the *Mukōyama Composition* style and then moved to the *Optical Composition* invited by Tsuburaya. The department that performed optical compositing was then called the *Optical Photography Department* (光学撮影部, *Kōgaku Satsuei-bu*), and the department that produced the materials necessary for optical compositing was called the *Optical Drawing Department* (学作画部, *Gaku sakuga-bu*). In summary, optical composition is a filming technique in which two or more film images are combined using an optical printer to create a composed image. The department divisions were responsible for drawing animations and creating compositing masks to integrate the live-action image with the animated parts. Once the masks were complete, they had to reshoot the scenes in the optical printer. Besides other people that worked with optical composition before, such as Shuzaburo Araki (荒木秀, 三郎, 1913-1961), mainly there was no formal instruction on these techniques. Laughingly, Iizuka explains: "We had to figure out all by ourselves what materials we needed to make that picture and how many times

[41] "『ゴジラの逆襲』の時は、もう本当に、特美っていうひとつのチームになってて。半分はアルバイトなんだけど、それがみんなベテランみたいになって."
[42] "それで勢いづいていたところに、円谷親父に「ちょっと」って呼ばれて。ちょうど『地球防衛軍』(1957) に入る前でね。「こういう(光学合成シーンが頻出する)仕事をこれからやりたいんだけど、お前やれよ」って言われて."

we could do the optical shooting. So, the film we used as a test had much length. When we tested the film and saw the results, it was common for us to scream "Aaah" and have to do it all over again. (Laughs)." (Hikawa et al., 2014, p.147, my translation[43])

For drawing and creating masks, they used the animation stand, which was commonly used for shooting 2D animation. Animation stands mainly consist of a camera that slides up and down; the graphic material can be stacked in several layers on a glass plate and locked with pegs; it is also movable from front to back and left to right, and it has a lamp that can be used to illuminate from above or below. Basically, if the lamp is removed from the animation stand and un-sensitized film (raw film) is inserted, the stand becomes a filming machine. Shooting, whether for animation or making masks for live-action, has to be done one shot at a time for the required length. "One second is 24 frames, so 240 masks are needed for 10 seconds, and they must be shot continuously. In the case of complex composites, four different masks may be needed for one finished image, so 960 masks alone would be needed." (Iizuka; Matsumoto, 2016, p.32, my translation[44]).

The work of the staff that dealt with optical composition had to be carefully planned and accessed; otherwise, in case of mistakes, weeks of work could be lost. In addition to drawing animation, the optical drawing department was also the one responsible for creating the masks necessary for compositing. However, they had a disadvantage, "In our case, unlike in the case of animation, it is not possible to see the result of a drawing on the tabletop by looking at it on the spot. We have to shoot the film once, develop it, and look at it to see if it is different or if we should do it a little more this way." (Hikawa et al., 2014, p.159-160, my translation[45]). However difficult it was, eventually, Iizuka learned the technical aspects and developed his own techniques.

> In addition to creating glowing rays of light by blending the core material during compositing, Iizuka used additional techniques to create more expression. Not satisfied with the optical printer effect, Iizuka created additional bokeh material, also using a fog

[43] "その画を作るためにどんな材料が必要か、オプチカル撮影を何回やればできるのかって、全部自分たちで考えなきゃいけない。だから、テストとして使ったフィルムはかなりの呎があったね。テストして上がってきて、結果見て、「ああ」って悲鳴上げて、もう一回やり直しって、ざらだったから。(笑)."

[44] "１秒間は２４コマなので、１０秒分のマスクは２４０枚が必要とされ、連続して撮影しなければならない。複雑な合成の場合は、一つの完成イメージにマスクが四種類必要という場合もあるので、そうなるとマスクだけで９６０秒撮影することになる."

[45] "だって、僕たちの場合は、アニメーションと違って卓上で描いたものをその場でバラバラと見て結果がわかるわけじゃないわけ。それを一回フィルムで撮影して、現像して、見て、「ああ、違う」とか、「もうちょっとこうしよう」というのがわかるわけ."

> filter, in areas of the image that he wanted to make glow more intensely. By burning this material, he succeeded in creating a stronger image of shining rays of light. Iizuka called this "core bokeh." This technique was Iizuka's sole forte and is the secret behind the many rays of light that fascinate viewers to this day. (Iizuka; Matsumoto, 2016, p.30, my translation[46])

After *Godzilla Strikes Back*, in 1956, the Economic White paper stated that "it was no longer postwar" since the economic growth and recovery were being driven by modernization. In the same year, when asked about the special effects situation of Japan, Tsuburaya said: "After the war, Japan's trick technology became so advanced that even the United States, considered the home of such technology, could not compete with us in terms of technique." (Go-Nen no Gakushū, 1956, p.37, my translation[47]). In 1958, the economic miracle known as *Iwato Boom* made the domestic consumption power rise, "(…) standards of living rose and households raced to obtain the 'three sacred treasures' (black-and-white television, washing machine, refrigerator)." (JILPT, 2016, p.3). This meant that with the economy stabilizing, there more possibilities for leisure and the availability of materials in the country.

It was in 1958 that the suitmaker pioneer, Keizō Murase (村瀬, 継蔵) joined Tōhō to assist Mr. Yagi in making the Baran suit. In the movie *Varan* (大怪獣バラン, *Daikaiju Baran*, 1958), they used latex instead of burning the rubber. Since the monster had thorns along the back, they faced issues finding adequate materials that wouldn't break during the fight scenes. However, Murase knew carpentry and different crafts by experimenting with DIY solutions with his father. To arrange a solution for Baran construction, Murase investigated materials at a store of household goods and electric appliances; that's when he found clear plastic hoses in different thicknesses to do experiments with. After cutting and molding the hose, he bought rolls of translucent plastic sheeting to close the open sections of the hose and to arrange the format of the thorns. Murase's

[46] "芯素材を合成時にボ功して、光り輝く光線を作り出す方法以外に、飯塚はさらなるテクニックを使って、より多くの表現を作り出した。飯塚は、オプチカルプリンターによる効果に飽き足らず、作画の中でより強く光らせたい部分に、同じくフォッグフィルターを使って追加のボケ素材を作ったのだ。そしてこれを焼き付けることによって、より強く光輝く光線のイメージを作り出すことに成功した。飯塚はこれを芯ボケと呼んだ。このテクニックこそが飯塚の独壇場であり、今も見る人を魅了してやまない数多くの光線を生み出した秘密であるパト本書はこのテクニックがいかにして生まれたか、飯塚本人の口から語られる貴重な記録でもある."

[47] "戦後、日本のトリックのぎじゅつのうえでは、ひじょうにすすんで、ほんばといわれるアメリカにも、ぎじゅつのうえでは、まけないようになりました."

craftmanship skills were well-received by Tsuburaya because using these materials meant that the monster could be more resistant and wouldn't break into the fighting scenes.

> Mr. *Oyaji* (Eiji Tsuburaya) saw it and said, "It wouldn't be a good picture if the thorns on the back fell apart and disappeared in the fight. You can break this, right?" I told him, "No, it's made of plastic hose, so it won't break." Mr. Tsuburaya patted the Baran thorns with his hand and said, "Oh, it won't break! Did you think of this?". I didn't even know how great Eiji Tsuburaya was until then, I had only heard about him from Mr. Yagi, but that was the first time I got to know him. (Tokusatsu Eiga Kenkyūkai, 2002, p.29, my translation[48])

One year before, in 1957, the Soviet Union successfully launched Sputnik, and the space age began with the competition between the United States and the Soviet Union. That same year, *The Mysterians* (地球防衛軍, *Chikyū bōeigun*) brought *Mogera*, Toho's first robot designed by Akira Watanabe. Mogera was constructed as a stuffed animal with independent limbs and painted with a metal texture. The image of Mogera would be passed on to *Mechagodzilla* in the scene where he reveals himself in the movie *Godzilla vs. Mechagodzilla* (1974). The idea of turning Godzilla into a robot, such as Mechagodzilla, was also inspired by the *Mechanic-Kong*, a remote-controlled robot double of king kong released first in the animated television series *The King Kong Show* (1966) and then in the movie *King Kong Scapes* (1967).

Rodan (1956) was the first flying manipulative monster and was a precursor of *Mothra* (モツラ, 1961). The Mothra monster had been inspired by a moth, and as such, it had different transformative stages, each requiring different suit models. Mothra was the first monster to use the piano wire to suspend its entire costume, requiring a team of manipulative wire workers to coordinate its movements. This technique would also be used for *King Ghidorah*, the antagonist of Godzilla, that became very popular in the movie *Ghidorah, the Three-Headed Monster* (三大怪獣地球最大の決戦, *San daikaijū chikyū saidai no kessen*, 1964). The development of new

[48] "オヤジさん（円谷英二）がそれを見て「格闘で背中の棘がバラバラになってなくなっちゃったら絵にならないからな。これ、折れるんだろう？」って聞くから、「いや、ビニールホースで作ったので折れません」って、手でボボボッと撫でて叩いたんです。オヤジさんも「おぉ、折れないのか！これお前が考えたのか」って言って。それまでは円谷英二という人がどれほど凄いのかも知らなくて、八木さんから話を聞いているだけだったけど、その時に初めて円谷さんを知るようになったんです."

monster movies meant that the manipulation of piano wires and the use of support rods to manipulate objects that would not normally move played an important role in developing tokusatsu techniques. Murase details the intricate manipulation work required for Guidorah:

> In particular, it took six to seven people to move King Ghidorah, which had three heads, two tails, and two wings and was full of moving parts, making it more labor-intensive than the eight-forked serpent. In particular, since Ghidorah swung its head and tail while flying, the movement of the main body and the manipulation of each part had to be done simultaneously. When a life-size stuffed animal was hung, it was quite a large-scale shooting. (Tokusatsu Eiga Kenkyūkai, 2002, p.59, my translation[49])

Manipulation teams develop skills to act and manipulate monsters parts, often having to act in unison during manipulation to convey a sense of liveliness to the movements. Other effects specialties also started to flourish, such as using gunpowder for explosions, flames, smoke, wind, and water to increase the elements of realism in the scenes. As well as the other effects mentioned, these also required a high technical knowledge of chemistry and physics. The elaboration of innovative techniques enhances the effects obtained but also requires careful technical development and attention to safety.

Kazuaki Sekiyama[50] (関山, 和昭) joined Toho studio as a part-time worker in the art department under Asame Kume (久米, 攻) and Tadāki Watanabe (渡辺, 忠昭). He participated in *Ultraman A* (1972) and *Godzilla vs. Megalon* (1973). Invited by Tōru Suzuki (鈴木, 昶), Sekiyama would also later join the *Tokusatsu Research Institute*. Other figures at that time that worked with manipulation and art-making for tokusatsu were Makoto Ogawa (小川, 誠), also at Toho, and Eiji Shirakuma (白熊, 栄治) at Daiei Studios, working in movies such as *Giant Monster Mid-Air Battle Gamer vs. Gaos* (1967), and *Gamera vs. Viras* (*Gamera tai Uchūkaijū Bairasu*, 1968). In an interview, Sekiyama details the techniques and materials used at that time for *King Ghidorah*.

[49] "特に首が 3 本、尾が 2 本、翼が 2 枚と、可動部分だらけのキングギドラを動かすのは 6 ~7 人を要し、八岐大蛇を凌ぐ手間のかかりようだった。ことにギドラは飛行しながら首や尾を振り動かすため、本体の移動と、各部の操演が同時に行われなければならず、等身大の着ぐるみを吊った時は、かなり大がかり撮影となった."

[50] He worked as a special effects and manipulation staff also for *Himitsu Sentai Gorenger* (1975), *Godzilla* (1984), *Giant God Warrior Appears in Tokyo* (2012), and many other tokusatsu productions.

> In *Ghidorah, the Three-Headed Monster* (1964), King Ghidorah destroys the buildings, which was obviously done with a different way of attaching gunpowder. Now, we put gunpowder directly on the inside wall of a building to create fire, smoke, and light, but not on that one. I think they put something like a wooden box on the wall and destroyed the building. (Hikawa et al., 2014, p.131, my translation[51])

Before King Guidorah's challenges, an earlier movie helped create solutions for monsters with multiple heads; it was *The Three Treasures* (日本誕生, *Nihon Tanjō*, 1959), directed by Hiroshi Inagaki. The film explored the legends of *Kōjiki* and *Nihon Shoki*, the oldest collection of myths about the origin of Japan and the Gods. *Three Treasures* story utilized the mythological monster *Yamata no Orochi* or *Oroshi*, the legendary eight-headed Japanese serpent/dragon-shaped monster.

To represent such a complex monster, the inventive Keizō Murase designed a monster suit that had no core and was suspended by piano wire. Murase made a device at the base of the neck of the serpent to open and close the air valve to move the eight heads. Additionally, as Eizo Kaimai states, they also used FRP: "The first use of FRP was in *The Three Treasures*. In this movie, there was a scene where the light came out of a mountain in the sky. So, we decided to make a transparent mountain. An engineer from Riken Science came to teach me how to use polyethylene for the first time." (Tokusatsu Eiga Kenkyūkai, 2002, p.40, my translation[52]). FRP is a fiber-reinforced plastic or polymer, and it is a material commonly used in the construction and vehicle business. The use of FRP increased the durability and sturdiness of the suit texture. One common element was the close relationship between studios and industries working with different construction materials. The art and sculpture staff often had to consult with specialists and scientists to understand the properties of the materials and how to utilize them to achieve aesthetic purposes.

In 1962, *King Kong vs. Godzilla* was produced to commemorate the 30th anniversary of Toho's founding. Eiji Tsuburaya, whom *King Kong* had strongly influenced, must have dreamed of a tag-team match with Godzilla, the monster he had created. King Kong's distinctive feature

[51] "『三大怪獣 地球最大の決戦』(1964)で、キングギドラが壊すけど、あれは明らかに火薬のつけ方が違ってるから。今、俺たちは、火薬を直接ビル内側の壁面に貼って、火を出す、煙を出す、光を出すで、メインに火薬を置くけど、あれには貼ってないよね。木箱みたいなものをドーンとやって、ビル壊してると思うよ."

[52] "FRP を最初に使い出したのがね、『日本誕生』なんだよ。この映画で、天上の山から光が出るっていうシーンがあったんだよ。それで透明な山を作ることになった。理研科学から技師が来て、初めてポリの扱い方を教えてもらったわけ."

was that hair covered his entire suit, so to adapt the suit, Eizo Kaimai says: "King Kong's body hair is made from goat's hair." (Tokusatsu Eiga Kenkyūkai, 2002, p.52, our translation[53]). Since they were using goat hair to produce the signature black color style, they burned the hair with gunpowder. However, this process meant they had to do patchwork whenever the hair fell or if there was some issue with the suit between filmed scenes. The technique of using animal hair was also used in *The War of the Gargantuas* (フランケンシュタインの怪獣サンダ対ガイラ, 1966) and later in *Megaloman* (メガロマン, 1979). This was part of Toho studio's concept of the *Transformation Human Series* (変身人間シリーズ), which focused on humans rather than on monsters. Other movies that were also part of this series are *Invisible Human* (透明人間, *Tōmei Ningen*, 1954), *The H-Man* (美女と液体人間, *Bijo to Ekitai Ningen*, 1958), and *Matango* (マタンゴ, 1963). However, as Kaimai makes it clear in this interview, using hair for suits was costly and required attention.

> I have two *Megaloman* heads, and in today's terms, one of them costs about 300,000 yen. When they get dirty from the action or something, I ask a hairdresser to wash them. I think they are called Chinese yaks—a big cow-like animal. The hair is bleached white and braided to make it longer. So, the labor cost was high because of the workforce required. So, like *Ambassador Magma*, heroes with hair cost a lot of money. (Tokusatsu Eiga Kenkyūkai, 2002, p.53, my translation[54])

In the stand-alone movie *Dogora, the Space Monster* (宇宙大怪獣ドゴラ, *Uchū Daikaijū Dogora*, 1964), the monster Dogora comes from space and has tentacles with a squishy and slimy texture. To produce this kind of texture, they developed a technique that utilized air pressure from below to create a water current to move Dogora's suit, which was left suspended in a water tank. However, to make the tentacles livelier, they also utilized animation and composed the footage. Keizō Murase explains this combination in an interview: "In the climactic scene of the destruction of the Wakato Bridge, the tentacles drawn with animation were composed with the miniature of

[53] "キングコングの体毛は山羊の毛を使っているんだよ."

[54] "メガロマンの頭はふたつあってね、今の金額で言うと、ひとつ 30 万円ぐらいかな。アクションとかで汚れると結髪屋さんに頼んで洗ってもらうんです。中国のヤクって言ったかな。でかい牛みたいな動物。その毛を白く脱色して、編んで長くする。ですから、人手がかかるので人件費で金額が高くつくわけね。だから髪の毛の付くヒーローってのは、マグマ大使もそうだけど、非常に金くうんですよ."

the Wakato Bridge suspended by piano wire." (Tokusatsu Eiga Kenkyūkai, 2002, p.67-68, my translation[55]).

Following in Toho's footsteps, Shochiku, Toei, Daiei, Nikkatsu, and other film companies hired some of Eiji Tsuburaya's technicians and started establishing their special technology divisions. One of the rivals of Toho in tokusatsu was Daiei Studios since they decided to create a universe within the genre. Daiei's first project was the unfinished *Giant Horde Beast Nezura* (大群獣ネズラ, *Taigun-jū Nezura*) which was supposed to be released in 1964. They wanted to use real rats in this project, but after many struggles, they canceled the project. In 1964, the Olympics were held in Tokyo, and Daiei studios moved on to its next project *Gamera* (大怪獣ガメラ, *Daikaijū Gamera*, 1965), directed by Noriaki Yuasa and with special effects by Yonesaburo Tsukiji. Akira Inōe, Masao Yagi, and Keizo Murase made the modeling of the monster. Subsequentially, in 1966, Masao Yagi, Keizo Murase, and Tōru Suzuki opened their modeling and production company called *Ekisu Production* (エキスプロダクション).

There were some material challenges in modeling and arranging the fire that came out of the first *Gamera's* mouth. "The flames that shoot out from *Gamera* and make it fly are made of asbestos, a material that can no longer be used. It was the one used in the chimney of a house's bathroom, and so the tube was attached to the inside to spew out flames." (Tokusatsu Eiga Kenkyūkai, 2002, p.85, my translation[56]). Asbestos is a natural fibrous silicate mineral that can be an electrical insulator and highly fire-resistant material. It was widely used in the construction industry until it was discovered that inhalation was harmful to health in the 1970s. However, even though they used anti-flammable materials, the flames would rise and make Gamera's nose melt a little, so they had to peel it off and repair it using latex.

The success of *Gamera* led Daiei studios to make a series of movies, including *Gamera vs. Barugon* (大怪獣決闘ガメラ対バルゴン, *Dai kaijū kettō Gamera tai Barugon*, 1966), and *Giant Monster Mid-Air Battle Gamer vs. Gaos* (大怪獣空中戦ガメラ対ギャオス, *Dai kaijū kūchū-sen Gamera tai Gyaosu*, 1967), and the first outer space fight in *Destroy all Planets* (ガメラ対宇宙怪獣バイラス, *Gamera tai Uchūkaijū bairasu*, 1968) among others. For the second movie, the

[55] "また、クライマックスの若戸大橋破壊シーンでは、さすがに細かい動きはかなわず、アニメーションで描かれた触手が、ピアノ線で吊り上げられた若戸大橋のミニチュアに合成された."

[56] "それからガメラが炎を噴射して空を飛ぶのは、今は使用不可になっているアスベストっていう素材でさ。昔、家の風呂場の煙突に使われていたやつなんだけど、その筒を内部に取り付けて炎を噴き出させたんだよ."

Gamera suit was redesigned by *Ekisu Production*, and the Barugon monster was molded by Ryōsaku Takayama (高山, 良策), who worked on *Ultra Q* (1966). Additionally, Daiei launched the first movie of the trilogy *Daimajin* (大魔神, 1966). The main character was modeled by Ryōsaku Takayama, who had also worked for Toho and acquired latex technical knowledge under Fuminori Ohashi. Subsequently, he applied his skills to various Daiei productions and Tsuburaya Productions.

At the end of the 60s, the first monster boom saw the first sign that its momentum was passing. Other genres started appearing, especially the ones dedicated to folklore, like *Yokai Monsters: 100 Monsters* (妖怪百物語, *Yōkai hyaku Monogatari*, 1968) and the animation *Gegege no Kitaro* (ゲゲゲの鬼太郎, 1968). The demand between production and the audience also became tighter with the increase of animation programs for television in Japan and abroad. While the first *Tokusatsu* boom happened in Cinema, the second boom happened in television, expanding the scope of the genre, and increasing its relationship with the animation field in aesthetic procedures. "Other Japanese pop culture products soon followed in the commercial slipstream created by the king of the monsters: Japanese animation and live-action series proved affordable ways to fill airtime in the early decades of American television." (Tsutsui, 2006, p.2).

Before entering the topic of tokusatsu in television, I want to remark that the artists DIY techniques and efforts led to creative breakthroughs in the face of scarcity. The methods developed by trial and error started being organized, and departments were divided by style or specialty. Yasuyuki Inoue defines it best in the interview with Toshio Miike:

> The SFX Art Department had groups such as carpenters, sculptors, backdrop painters, plasterers, and electricians. Each group was filled with talented artists and artisans. For metal work, Syujiro Iijima was highly talented. He made metal tanks for water dumping devices. Among my assistants, Toshiro Aoki was particularly helpful. Although Eiji Tsuburaya established the golden era of the Toho effects films, he attained it because of the people in the SFX Art Department. (Miike, 2022, p.315)

To organize some of the techniques mentioned in this section and based on Iizuka Sadao's drawings and explanations of them (Hikawa et al., 2014, p.188 – 205), I made a general framework of Tokusatsu techniques developed at the time (see Figure 1). In the Special Effects art department,

the set production team would be responsible for building and decorating the set, and its natural scenery, such as the sky, forests, mountains, etc. In the same department, they would have the sculpture and suit production team dedicated to the suit-making process, using numerous materials and different sculpting techniques. The special effects dedicated to gunpowder and explosions would investigate destruction mechanisms, materials such as gunpowder, gasoline, cement, fireworks, and so on, and ignition devices. The manipulation and wire work team would be responsible for the movements controlled by the piano wire. The wires were color painted, so they do not show up on camera, and the lighting is also designed so that the wire lines do not shine.

They also produce effects with water, and at Toho, they build a large pool with permanent devices attached underwater and at the surface for filming water-related scenes. The shooting and camera group used trick camera angles, high-speed shooting, and slow motion to produce perspective adjustments of miniatures. The lighting team used multiple lights to create depth and three-dimensionality in a subject, using light bulbs, aluminum foil, and materials that could reflect light. Finally, the post-production team works with composition and editing; they utilize an optical printer that combines a projector for projecting the material to be composed and a camera for capturing images to create complex compositions. When creating composition images on film, a mask is used to create an unexposed area, and the film is rewound and re-photographed, this time with the already-exposed side masked. The composed images can also be done with glasswork, line drawing, animation, etc. Although departments were being organized according to techniques, there was no division of labor at the beginning, so all the staff experienced various things. Whoever was available and willing to assist would take on different responsibilities.

> Iizuka: *Godzilla* was a hit, wasn't it? If *Seven Samurai* (1954) and *Godzilla* had not been successful, then Toho would not have existed. That's how much Godzilla was a catalyst for Toho. After Godzilla became a box-office success, they decided to make a tokusatsu film, which led to the production of *Godzilla Strikes Back* (1955) and *Half Human* (1955). Godzilla was the first film that got me into the world of tokusatsu, and I think of Godzilla as a treasure that will last me a lifetime. (Hikawa et al., 2014, p.144, my translation[57])

[57] "飯塚:『ゴジラ』は当たったでしょ。あの時、『七人の侍』(1954)と『ゴジラ』が当たらなかったら東宝は成り立たなかったと思うんだ。それくらい『ゴジラ』はね、東宝を盛り上げたひとつのきっかけになった。『ゴジラ』が興行的に当たったんで、それから「特撮映画を作ろう」ということになって、『ゴジラの逆襲』(1955)とか『獣人雪男』(1955)とか作ることになったでしょ。僕も『ゴジラ』がきっかけでこの世界に入ったんで、『ゴジラ』は、自分の生涯の宝物みたいに思ってるわけ."

Iizuka clearly states that *Godzilla* was a catalyst for creating tokusatsu movies and a precursor to open the field to DIY practices. Its success helped create hope for visual effects production, an art starting in Japan. At the end of this section, it is possible to say that the resourcing of materials, the development of techniques without prior instruction, and the collaborative process born in this period were perhaps more politically engaged than credited. In the next section, this research will turn to the connections and collaborations of artists in tokusatsu and animation practices. The aim is to demonstrate that the interconnection between artists forged creative approaches to make moving images. Finally, this research will also look at how the television expansion in Japan created a healthy battle between tokusatsu and animation for the viewer's attention.

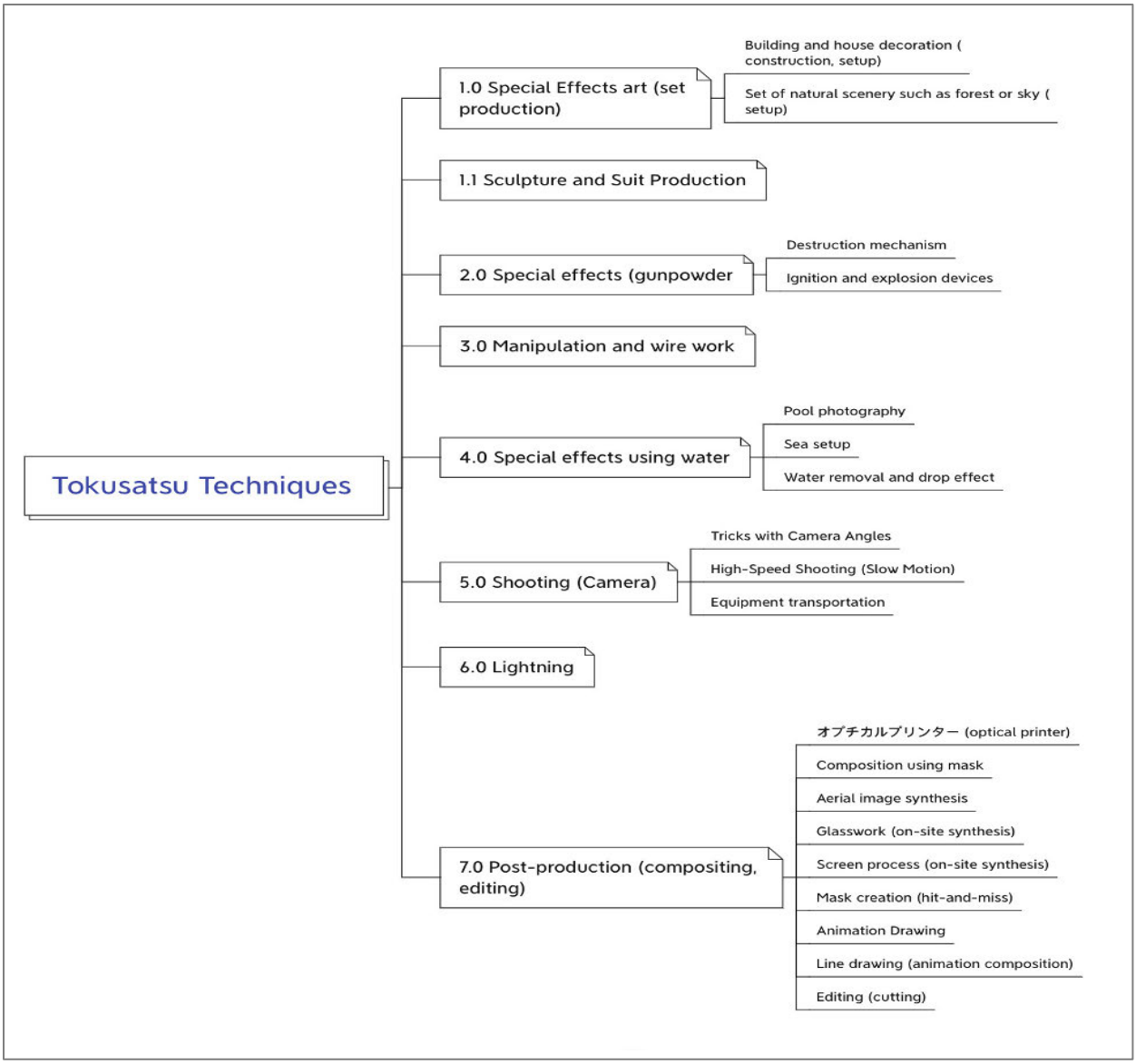

Figure 1 Tokusatsu Techniques Graph

Chapter 2: Tokusatsu Media Expansion

2.0. Media Transformations: Tokusatsu, Robot Anime, and Television Media

In the sixties, a paradigm shift emerged within animation and tokusatsu production since television media became widespread in Japan. Like Tokusatsu, the animation industry was also taking DIY steps to develop its own aesthetic characteristics. In the early stages of television media, manga from children's weekly & monthly magazines and folkloric stories were considered a primary source for animation. However, when tokusatsu shows aired in television, they challenged animation because the glimmering appeal of monsters, heroes, and weaponry became hugely disseminated. As tokusatsu captured adults' and especially children's attention, the animation industry changed in various ways. The 60s and 70s are a period of extensive experimentation and collaboration between artists and media formats. This period was crucial for establishing the basis of Japanese media into established genres with recognizable aesthetic forms.

However, around the '60s and 70s, television media had different names and definitions. For example, *Terebi Manga* (*Manga for TV*) was an umbrella term for animation, live-action *shonen heroes*, and tokusatsu. "Initially, animations broadcast on television based on manga were called TV Drama, TV Anime, TV Manga, etc., but TV Manga gradually took hold. However, the term *TV Manga* existed even before *Astro Boy*, and some people referred to *Manga News* around 1958." (Nishimura, 2018, p. 241, my translation[58]). One example of experimentalism within media aesthetics and formats can be found in Tezuka Osamu's works.

The original manga *Ambassador Magma* (*Maguma Taishi*, 1951-1952) was adapted as a tokusatsu show with the same name aired on Fuji TV (1965-1967), and later the manga *Tetsuwan Atomu* or *Astro Boy* (1952-1968) would be adapted as animation (1963-1966) and live-action *shonen hero* drama, *Mighty Atom* (1959-1960) produced by Mainichi Broadcasting. The *Ambassador Magma* adaptation to the tokusatsu television series was created by Tomio Sagisu

[58] "当初、テレビで放映される漫画のアニメーションは、テレビ動画、テレビアニメ、テレビ漫画などと呼ばれていたが、しだいにテレビ漫画が定着していく。ただし、「鉄腕アトム」以前にもテレビ漫画という名称があって、一九五八年に始まった「漫画ニュース」をそのように呼ぶ論者もいた."

company P. Productions[59]. The series was the first tokusatsu made in color, released before *Ultraman* from Tsuburaya Productions.

Tomio Sagisu (1921-2004), who created the production company P. Productions in 1960, was a popular manga artist before that, working under the name Ushio Souji[60]. Souji had been in contact with Tezuka since the early 1950s when Tezuka worked for *Manga Shōnen*. Before the war period, he entered the Line Drawing Room (線画室, *Senga-shitsu*) of Toho Studio, and the head of the office was Ikuo Oishi[61] (大石, 郁雄). However, Oishi was suddenly called to war. During this period, producer Mori Iwao appointed Eiji Tsuburaya as the manager of the Special Technologies Division (特殊技術課, *tokushu gijutsu-ka*) and as acting manager of the Line Drawing Room in Oishi's absence. As such, Ushio Souji worked under Eiji Tsuburaya during this period.

> I was in charge of the animation essence of the work in this Line Drawing Room. Still, it took me three years to master the entire process from scenario → creating storyboard → key and in-between animation team → in-between animation → background → shooting → development rush editing (acetone apply by hand) and so on. Even so, I could not say that I was a full-fledged professional unless I spent another two or three years mastering every part of the process thoroughly. (Souji, U., 2007, p.188, my translation[62])

The technical procedures that Ushio Souji describes can be applied for image composition, utilizing live-action and animation-based techniques. At the time, the cel for animation was already being produced domestically; however, companies would wash, dry, and reuse used cels about five times due to financial struggles. As a manga artist, animator, and knowledgeable person about tokusatsu procedures, Souji Ushio was uniquely positioned to work with Tsuburaya and later Tezuka. The animation *The Story of the Muk Tree* (ムクの木の話, 1947), directed by Shoji Maruyama, was the first animated film produced by Toho Educational Film. The short film tells

[59] P. Productions is currently owned by Shiro Sagisu, the composer of the soundtrack of *Neon Genesis Evangelion*, (1995) and *Shin Godzilla* (2016).
[60] Since I'm utilizing a resource where the artist uses the name Ushio Souji, I will be referring to him as such in the rest of the text.
[61] In this period, Toho concentrated on films for military cooperation. The teaching film materials used line drawings (animation) to explain new weapons and bombing theories for military training and were produced under Toho's wartime cooperation system.
[62]"ボクはこの線画室で、アニメーションのエッセンスのような仕事を担当したのだが、シナリオ→絵コンテ作成→原・動画→中割りアニメ→背景→撮影→現像ラッシュ編集(アセトン手つなぎ)まで全工程の習得に満三年を要した。それでも本当はあと二、三年くらいかけてどの部分も完全にマスターしなければ一人前とは言えなかった."

the story of the changing seasons that come to an old tree, and Souji Ushio made the special effects that contained live-action combined with animation. When it was released, Souji Ushio and Tsuburaya watched and discussed the techniques used. Ushio describes Tsuburaya's comments on the scene where snows fall on the ground.

> "I always told you there are only three kinds of tokusatsu: miniature, composition, and camera work. In other words, this technique is the camera work. It's the most efficient technique that doesn't cost much money or time. But it doesn't work very well by itself because you must also be familiar with the anime field and at the same time have a good knowledge of camera mechanics," he said. When Eiji Tsuburaya finished watching the scene where the air freezes over, he left, saying, "You are the only one who can express this kind of scene beautifully now." (Souji, U., 2007, p.218, my translation[63])

The memories archived by Ushio Souji before he passed away in 2004 are invaluable to understanding how animation and camera knowledge were deeply intertwined in artists practices. This know-how went beyond limited pre-conceptions between media, ultimately giving space for the necessary experimentalism to create innovatively aesthetic procedures. In Tsuburaya's comment to Ushio Souji, he clarifies that although camera work is fundamental, it only works if you combine it with anime field knowledge. Tsuburaya recognized that it was the combination of both practices that ultimately would create a new mode of image expression. In P. Productions, following the massive success of the television series *Astro Boy* (1963) and its system of creating merchandising and sponsorship to regain revenue, they decided to produce the animated television series *Zero Sen Hayato* (０戦はやと, 1964). At that time, P. Productions had less than ten employees, with two coming from Toei Doga and five joining them at its inception. In 1965, the studio produced the tokusatsu pilot *The Adventure of Mr. Crab* (クラブ君の冒険), combining live-action, animation, and new techniques.

[63] "いつも俺が君に言っていた、特撮はミニチュアワーク、合成ワーク、カメラワークの三種しかないってやつだ。つまりこの技術はそのカメラワークなんだ。金も時間もかからない最も効率的なテクニックだよ。しかし、なかなかこれがうまくいかないのは、アニメ分野に精通し、同時にカメラメカの知識に詳しくなければならないからだよ」円谷英二は最後に空気の凍るシーンを見終わると、「こういう情景をみごとに表現できるのは、いまや君しかいないんだ」と言って帰っていった."

> I made the pilot version of "The Adventures of Mr. Crab" as a test of various new technologies, including 'realistic animation' (still animation), 'matte raw compositing' (a technique to reduce fixed costs), 'super-detailed animation that resembles live-action,' and 'invisible human processing through a mixture of still animation and live-action,' as well as testing a range of new technologies. (Souji, U., 2007, p.260, my translation[64])

At this point, Tezuka and Souji would have different meetings. Tezuka was aware of Souji's works and his company's quality, as P. Production also supported Mushi Productions when they were overwhelmed by the animation production workflow for television. Previously, Tezuka had allowed for a tokusatsu adaptation called *Mighty Atom* (*Tetsuwan Atomu*, 1959-1960) from his manga *Astro Boy*. It was produced by Mainichi Broadcasting and Matsuzaki Production and sponsored by Lotte Corporation. Matsuzaki Corporation was founded by Keiji Matsuzaki, who had worked at Toho before the war with Eiji Tsuburaya. However, it was not a secret that Tezuka was not satisfied with the result of this tokusatsu adaptation and was reluctant on allowing other adaptations in the future.

Ushio Souji had a good professional and personal relationship with Tezuka, so he convinced Tezuka to allow P. Productions to produce a pilot tokusatsu based on Tezuka's original work. Souji convinced Tezuka based on the condition that Tezuka had to approve the pilot version before they created the series. After Tezuka approved the pilot version, they launched *Ambassador Magma* (*Maguma Taishi*, 1966-1967). The series also combines live-action and animation effects, characteristics that Souji had been working on perfecting it. In this way, it can be said that Souji's artistic practice of mixing media and ability to work with different technologies made this project possible and so well received.[65]

After the success of *Ambassador Magma*, Tezuka decided to produce his TV drama, called *Vampire* (バンパイヤ, 1968-1969)[66], with 26 episodes aired on Fuji TV. Aesthetically it was a composition of animation and live-action, where a cell-animated wolf was combined with a live-action background. The composition effects credits are given to Eiji Yamauchi, who worked at

[64] "ボクはパイロット版 『クラブ君の冒険」を「リアルアニメ」(スチールアニメ)、「マット生合成」(セット費を軽減するための技術)、「実写まがいの超密画アニメ」、「スチールアニメと実写の混合による透明人間処理」など、さまざまな新技術のテストを兼ねて作った."

[65] For in-depth reading about the relations between Souji and Tezuka during the period of making this tokusatsu series, see, Souji Ushio, (2007), Chapter 12. マグマ大使誕生話 (*The Story behind the birth of Ambassador Magma*), p.256-271.

[66] See Staff and Technical information about the TV Drama Vampire from the Tezuka Osamu website. Available at: https://tezukaosamu net/jp/anime/38 html (Accessed 2022, February 15).

Toei Studios, and then joined Tezuka's company Mushi Productions. Eiji Yamauchi would become a founding member of Sunrise studios, collaborating on the planning of *Gundam* and later becoming the company's president.

Nishimura (2018) points out that in the early 60s, new trends emerged in animation, and he classified it into three general types. First, long feature animations released in movie theaters, an example being Toei Studios productions; second, the experimental animated films produced by individual artists, as represented by *Animation Society of the Three* (アニメーション 3 人の会) and finally, television animations, for example, *Astro Boy* by Mushi Productions. For long feature animations, for instance, Toei Animation began as a studio in 1956, aiming at making feature films that could rival Disney Productions. Later, they would also join the movement of making animation for television. The studio gathered animators such as Yasuo Otsuka, Yasuji Mori, Tomoharu Katsumata, and the upcoming animators Isao Takahata and Hayao Miyazaki of the now-famous Studio Ghibli.

However, while Toei studios were working on featured animation films, Osamu Tezuka aimed to bring animation to television. "In feature films such as Toei's, it was common to use only one cel for two frames of film, but for *Astro Boy*, one cel for every three frames shot was the smoothest animation used, and often the animators tried to use only one drawn cel, with zooms and pans giving the illusion of movement." (Condry, 2013, p.104). The limited animation style was not unique to Japan; as Morishita (2018) shows, since the 1950s, this animation style appeared under UPA, as animators Zack Schwartz, Steve Bustustow, and David Hilberman had left Disney's realistic animation style behind, choosing a more expressive, modernist avant-garde expression for their new studio. The studio focused on creating a heterogenous style environment. "It's stylized, limited animation became *de rigueur* in television and its low-budget, commercialized series." (Andrae, 2013, p.198). Limited animation techniques allowed for a different representation than the restriction of Full animation realism at Disney. As such, animators, designers, and cartoonists became more engaged in creating independent animation and animation for television and commercial purposes.

In Japan, Yoji Kuri, Hiroshi Manabe, and Ryohei Yanagihara established the *Animation Society of the Three* in the '60s at the Sogetsu Art Center. This art center supported artists in exchanging and transmitting various authorial experimental arts. They held the *Animation of Three* screenings featuring the works of the three already named artists. It evolved to be an *Animation*

Festival in 1964, with more creators participating in the festival. "The participation of artists who were then attracting attention in their respective fields, including cartoonist Osamu Tezuka, artist Tadanori Yokō, and illustrators Akira Uno and Makoto Wada, further expanded the range of expression in animation." (Morishita, 2018, p.290, my translation[67]). The development of this festival was marked by experimenting with a media mix of experimental music, narration, actors, and animation. Although the group was extinguished in 1966, individual or authorial animation in Japan was nurtured by these activities led by Yoji Kuri.

> The animation of the three was in 1960. I knew from two or three years before that the era of manga would change, that the age of animation would come, and that the age of Japanese TV cartoons would replace magazines and the like. That's why I was thinking of doing animation before that time. (…) It was around 1952 that TV stations were established all over the world. Television simultaneously sprang up in Japan, the US, France, and Spain. Therefore, animation also sprouted on the other side of the world without influencing each other. Each grew on its own. It is not as if we inherited the influence of ten years in the USA. (Kuri cited by Morishita, 2018, p.293, my translation[68])

Yoji Kuri thought that animation would invade television and that television and media would develop independently in each country. However, that can be true to a certain extent, as aesthetic influence from abroad was bound to inspire artists. The arrival of television, the wave of independent productions, and the proximity to live-action tokusatsu would create a welcoming environment for media innovation. *Moonlight Mask* (*Gekkō Kamen*, 1958-1959) is a TV adventure drama program, and it's the first masked hero, produced by KR TV (now TBS TV) and Senkōsha. "*Moonlight Mask* was born from the words of Toshio Kobayashi, president of Senkōsha Productions, 'Let's make him a hero like *Superman*!' The original story was written by Yasunori

[67] "漫画家の手塚治虫を始め、美術作家の横尾忠則、イラストレーターの宇野亜喜良や和田誠など、当時各分野で注目を集めていた作家達の参加により、アニメーションの更なる表現の広がりを成功させた."

[68] "3 人のアニメーションは一九六〇年でしょう。その二、三年前から、マンガの時代は変わって将来アニメの時代になる、雑誌とかに代わって日本のテレビ漫画の時代が絶対に来るって分かっていたわけ。だからその前にアニメーションをやろうと僕は考えていた。(中略)全世界にテレビ局が出来たのは一九五二年頃でしょう。日本もアメリカも、フランスにもスペインにも、テレビが同時に芽生えた。だからアニメも地球の裏側でも、お互いに影響なくして芽生えてきた。それぞれが勝手に芽生えてきた。アメリカで十年やって、その影響を受け継いだとかいうんじゃなしに" This citation appears on Morishita (2018, p. 293). For further research on the topic, please see the original Kuri, Yoji (久里洋二). (2002) 'Otona manga o animēshon ni shitakatta' in Sogetsu Art Centre Records Publication Committee. "輝け 60 年代 草月アートセンターの全仕事". Tokyo: Film Art (フィルムアート社), pp.138-139. About the story of the Sogetsu Center as an avant-garde art space in the 1960s, see https://www.sogetsu.or.jp/about/artcenter/ (Accessed 2022, February 20).

Kawauchi, a hero with a very Japanese sense of compassion." (Iwasa, 2008, p.20, my translation[69]). As Allison (2006, p.98) points out, *Superman* comics and live-action circulated widely in post-war Japan. Although *Superman* influenced the superheroes in Japanese television dramas, the subsequent heroes that appeared in tokusatsu would take a different take on the hero trope. Since *Moonlight Mask*, the masked hero series was a hit, and that encouraged the production of more series, such as *Yūsei Ōji* (遊星王子, 1958-1959), the first alien hero produced by Senkōsha.

> In other words, they were the great ancestors of the later *Ultraman* and *Space Sheriff Gavan* (1982). Following the analog heroes of costumed private detectives fighting international gangsters, it is not difficult to imagine the difficulties faced by Senkōsha Productions, which had neither the precedent nor the know-how to portray a hero who had suddenly come from outer space. It is worth mentioning that they were also the great ancestor of *Ultra Q* (1966) and *Captain Ultra* (1967). (Iwasa, 2008, p.21, my translation[70])

In this scenario, as tokusatsu and animation were entering television and evolving, transformations would happen to these genres. The iconic image of *Astro Boy* paved the way to include the robot or mecha in future tokusatsu productions, where monsters, robots, and heroes would conquer the viewers in Japan and abroad. Next section will focus on the development of *Ultraman* and *Kamen Rider*, and how they came to exist through collaboration between artistic fields, and their impact in tokusatsu genre.

[69] "宣弘社プロダクションの小林利雄社長の「スーパーマンみたいなヒーローにしよう!」との鶴の一声で誕生した『月光仮面」は、憂国の士、川内康範が原作を手掛けたことで極めて日本的な慈愛に溢れるヒーローとなった."

[70] "言うなれば、後のウルトラマンや宇宙刑事ギャバンたちの偉大な先祖ということになろう。コスプレした私立探偵が国際的なギャング団を相手に戦うアナログヒーローに続いて、いきなり宇宙からやって来たヒーローを描くにあたり、その前例もノウハウも持たない宣弘社プロダクションの苦労たるや想像に難くない。とは特筆に値する。これまた『ウルトラ Q』(1966 年)や『キャプテンウルトラ』(1967 年)の偉大な先祖といえよう."

2.1. Ultraman and Kamen Rider

In the middle of the 1960s, with the widespread of television, the film industry entered a stall period. Eiji Tsuburaya, Nobuo Yajima, Tomio Sagisu (aka Ushio Souji), and others became independent and established their own production companies aiming to enter the television world to survive. Nobuo Yajima worked first at Shochiku Co., then until around 1969, he mainly worked on tokusatsu TV series in cooperation with Toei Special Technology Division. Later, he would work on the tokusatsu television series *Spectreman* (1971-1972) created by Ushio Souji at P. Productions and *Ultraman* series in Tsuburaya Pro. When Tsuburaya Productions was first established, it still had strong ties with Toho studios since it was the largest shareholder and its executives also worked managing both companies. So, the studios dedicated to the cinema would also play a big part in expanding the productions for television.

The origin of Tsuburaya Productions can be traced back to *Tsuburaya Special Technology Institute* (円谷特殊技術研究所), which Tsuburaya established in 1948 when he was temporarily banned from Toho because of his involvement with war movies. Besides his work at Toho, Tsuburaya's institute attracted artists interested in making tokusatsu and learning new filming techniques. At that point, Sadamasa Arikawa, who would become Toho's second special effects director, Minoru Nakano, Kazuo Sagawa, and Tetsuo Kanjo, frequented the research institute. Later they would become indispensable members of Tsuburaya Productions.

In 1963, the institute was renamed *Tsuburaya Productions*, and they started working on a project called WOO for Fuji TV, and for TBS, a project called *Unbalance* (アンバランス). Anticipating the success ahead, the company purchased an Oxberry Optical Printer from the USA. Still having no money, Tsuburaya had to get assistance and asked TBS to make the purchase of the Optical Printer for his new studio. At Tsuburaya Productions, they also brought people from different fields to collaborate and create Tokusatsu for television. "Young staff members from the research institute, veterans of special effects films from Toho and other companies, surrealist artists, and TV directors from TBS were stimulating each other while establishing a new genre of

"Tokusatsu drama on TV." (Tsuburaya Pro., 2001, p.134, my translation[71]). When *Ultra Q* (1966, February to July) aired on TBS with its alien heroes fighting monsters (similar to monsters developed for the WOO project), it caused the beginning of the *Second Kaiju Boom*. Meanwhile, in July of the same year, P. Production launched the already mentioned *Ambassador Magma* based on Osamu Tezuka's original story, as the first color TV series produced in Japan, one week before the release of *Ultraman* (1966-1967). However, Tsuburaya had no direct competitive animosity towards new studios since he offered consultation and encouragement to the new companies appearing since he had worked directly or indirectly with many people.

Around the same time, Tsuburaya Productions began working with Nippon TV, releasing *Kaiju Booska* (快獣ブースカ, 1966) as a co-production with Toho. The *Booska* series genre is a sitcom for children, is friendly, and is closer to human-sized kaiju. The shift to appeal to the children public also was influenced by gag/comedy manga, *Osomatsu-Kun* (おそ松くん, 1962-1969), created by Fujio Akatsuka, and *Obake no Q Taro* (オバケの Q 太郎, 1964-1966) created by Fujiko Fujio (Fujiko Fujio A, Fujiko F. Fujio). The world of manga and animation influenced the creation of tokusatsu dramas for television since the idea of appealing to a fantasy/comedy/drama with new special effects techniques could easily capture children's reactions. "The influence of Fujiko Fujio's animated film *Obake no Q Taro* (1965), which coined the term *QQ Time* in conjunction with *Ultra Q*, which was also a major factor." (Tsuburaya Pro., 2001, p.134-135, my translation[72]). After *Ultraman*, *Captain Ultra* (1967), a tokusatsu show produced by Toei Company, took its time slot at TBS broadcasting. Besides working at his studio, Tsuburaya also oversaw and advised the work of special effects director Sadamasa Arikawa for the movies *Son of Godzilla* (怪獣島の決戦 ゴジラの息子, *Kaijū Shima no kessen Gojira no musuko*, 1967) and *Destroy All Monsters* (怪獣総進撃, *Kaijū sōshingeki*, 1968).

The DIY aspect of monster making was also improved by artists interested in avant-garde movements, such as Futurism and Surrealism. Ryosaku Takayama (高山, 良策, 1917-1982) was a Japanese painter influenced by Surrealism, a suit maker, and a sculptor. Takayama, with Akira

[71] "研究所時代からの若手スタッフ、東宝や各社から来た特撮映画のベテラン、シュールレアリズムの芸術家、TBS から来たテレビ演出家たちが互いに刺激を与えつつ、「テレビにおける特撮ドラマ」という新ジャンルを確立していったのである."

[72] "『ウルトラ Q』とセットで「QQ タイム」という造語を生んだ藤子不二夫原作のアニメ『オバケの Q 太郎』(1965) の影響も大だった."

Sasaki and Seiji Kato, worked in the puppet production for the short, animated film *Poron Guitar*[73] (ポロンギター, 1959) directed by Go Ono. This was part of the efforts made by Toei that had established the Educational Film Department, giving space for developing domestic and independent animation. Ryosaku Takayama was introduced by Tohl Narita and joined the production of the monsters for *Ultra Q*. Tohl Narita (成田, 亨) was a part-time worker in the set of *Godzilla* (1954); he also worked at Toei, and in 1965, he became a contract employee of Tsuburaya Pro. Narita served as art director from the second season of *Ultra Q* (1966) and designed monsters and regular mechanical items for *Ultraman* (1966), *Ultra Seven* (1967), and *Mighty Jack* (1968). Besides his work as a suitmaker, Narita produced sculptures and held solo exhibitions, eventually opening his art gallery called Gallery Urin in Ginza (closed in 1992). In 1970 when the World Expo was held in Osaka, many artists created and exhibited artworks. One of its landmark artworks was the *Tower of the Sun* (太陽の塔, *Taiyō no Tō*) created by Tarō Okamoto. Narita participated in the creation of the *Three of Life* (生命の樹, *Inochi no ki*), based on Okamoto's original idea, which was placed inside the *Tower of the Sun* artwork.

However, at the time of *Ultra Q*, Tsuburaya Productions did not have a line drawing department, so a former Toho production manager named Tatsuo Kuroda did the line drawings. Since TBS had purchased the Oxberry Optical Printer, Tsuburaya Pro workers had to go to TBS Films to produce materials, edit them, and make the optical composition materials. In this situation, Tsuburaya asked his long-time collaborator, Sadao Iizuka, to help make the special effects for *Ultra Q*, even though he was not supposed to work outside his job at Toho. Tsuburaya had gathered tremendous respect among artists of many fields.

> In such a situation, if I were asked to cut off a piece of mask in this cut or remove a moving mask from this part of the film, I would do it. Of course, strictly speaking, this was something that Toho personnel were not allowed to do. If Tsuburaya (*Oyaji*) said, "Do it," and there was no one else to do it, I had no choice. I had to do it. (Iizuka; Matsumoto, 2016, p.177, my translation[74])

[73] *Poron Guitar* (26 min., 16mm, color, Gakken). For more information, see https://gakken-eizo.com/artanime/movie html (Accessed 2022, February 15).

[74] "そんな流れの中で、俺は、「このカットで一枚マスクを切ってくれ」とか、「この部分の移動マスクを取ってくれ」とか言われたら、やっていたんだよ。それはもちろん厳密にいえば、東宝の人間としてはやってはいけないことなんだけど。オヤジが「やれ」って言えばさ、やる人がいないからしょうがない。やらざるを得ないわけだよ."

The leading team for *Ultra Q* was Keiji Kawakami, invited from Shochiku, Hajime Koizumi, and Sadamasa Arikawa as special effects directors, and Toru Matoba, active in Daiei studios. Tsuburaya's work method was to entrust the veterans with the production supervision while assigning young staff members who had gathered under his supervision as assistants and allowing them to gain more experience in the special effects field.

The sequel *Ultraman* was planned almost simultaneously, but it would be made in color film. Mamoru Sasaki and Keisuke Fujikawa wrote the script about the hero *Ultraman*, who came to earth to pursue the monster *Bemura* from the M78 nebula. For the effects on Ultraman, Iizuka Sadao would make the drawings and the masks to be used and take them to TBS so they could unify the images in the optical printer. At that time, all compositing work was done on 35mm film, even for television. For *Ultraman*, Ryosaku Takayama and Narita worked together to create a series of famous monsters.

> We also devised our trick to make the monster close its eyes. The actor squeezes the bicycle's brake connected to the wire inside so that the monster closes its eyes. (…) It was made by dissolving large head hairtails powder in oil and putting it in a can. (…) For Gabadon's body, I used buttons from a jumper. (Tokusatsu Eiga Kenkyūkai, 2002, p.104, my translation[75])

The main thing about the design of *Ultraman* effects is that the *Specium Ray* and the other movements utilizing visual effects were all created through discussion among the staff members brainstorming how they could create them. "Ultraman features not only the Specium Ray, but also the Eight Split Rings, the Super Gun and Spider Shot of the Science Special Search team members, and other various ray techniques." (Iizuka; Matsumoto, 2016, p.181, my translation[76]). These effects were by no means an easy task. For example, the eight-part halo that cuts the Baltan aliens in half composition had to be meticulously calculated, considering the timing between the effect, the sound, and the blade cut of Baltan, to produce a unified moving image. For the *Specium Ray*, the challenge was to create a three-dimensional volume, as Iizuka clarifies in this interview.

[75] "それから怪獣が目を閉じたりする仕掛けも独自に考えていました。役者さんが中でワイヤーにつながっている自転車のブレーキをギューッて握ると、怪獣が目つむるように。（…）太刀魚の粉を油性で溶いたものが缶に入ってね。(…) ガバドンの身体には、ジャンパーのボタンを使いました."

[76] "「ウルトラマン」は、スペシウム光線だけでなく、八つ裂き光輪、さらに科学特捜隊員の持つスーパーガンやスパイダーショットなど、多彩な光線技による見せ場が多い."

“That’s why in the beginning, I made the *Specium Ray* denser in the middle. Then, as you go outwards, the density is broken up. In this way, the image is flat, but it appears three-dimensional. The light in the middle is very strong, while the light around it becomes weaker.” (Hikawa et al., 2014, p.162, my translation[77]). For more precision, Iizuka used an animator tap, a metal device used to fix the animation paper in the same position. Precision was necessary, especially when they had to make composition masks for running figures.

After Tsuburaya’s death on 25 January 1970, Sadao Iizuka and Minoru Nakano established their own special effects company called *Den Film Effects* (デン・フィルム・エフェクト). Additionally, after Tsuburaya’s death, Toho undertook a drastic transformation and reduced the overall budget.

> (…) on March 1, 1970, shortly after Tsuburaya’s death, the studio closed the Art, SFX, Electric, Entertainment, and Acting departments and reorganized them into newly formed Administrative, Art, Visual, Entertainment, Property Management, and Machinery departments. At this time, Yasuyuki Inoue and his assistant Toshiro Aoki opposed the closure of the SFX Art Department. As a result, the department survived and became a new division under the auspices of the Art Department. (Shiraishi, 2022, p.312)

The *Ultraman* opening, with its fluid body transforming into the program logo, the concise and easy-to-understand episode format, the unique monster’s transformations/attacks, and other design aspects, have contributed to its popularity. But another significant change was that parallel with the program's broadcast; a soft vinyl monster doll was released by the toy manufacturer Marusan Shoten in May 1966. The toy industry aimed at boys was made of vehicles, cars, boats, soldiers, etc. The shift to making a soft vinyl monster was innovative and well-received. This led to a soft vinyl doll boom and a full-fledged monster boom in toy production. This was before merchandising, or toy-making in television programming, was established. Tezuka had already connected animation and merchandising revenue, but the idea of making characters into toys would completely change the animation and tokusatsu industry. In contemporary terms, merchandising and toy production are closed related and theorized within the animation industry.

[77] “だから最初のころのスペシウム光線は、真ん中で、密度濃い線にしたんだよ。それで外側に行くに従って密度をバラバラにしてるわけ。そうすると、平面なんだけど立体的に見えてくる。真ん中はワーッと強い光で周りは弱くなっていくっていう感じで.”

However, it was pivoted from the interaction between the fields (animation; tokusatsu), creating new possibilities in the industry.

Model fans recognize Marusan Shoten as Japan's first manufacturer to produce plastic models. When the *Ultra Q* series started to be broadcasted, the company launched the electric-powered walking plastic model toys of the series characters. In 1964, *Marusan* had already released an electrically powered walking *Godzilla*. In August 1966, they launched the *Walking Kaiju Series*[78] for all the monsters that appeared in the series; for example, *Kaiju Gomes* (歩く怪獣シリーズゴメス, ART No.496, 1966) contained one control box, one gearbox, and three rubber tires, size was around 25 cm. Unlike the soft dolls, this model was green and accompanied by an electric control box.

After the *Ultraman* series was launched, they released the first *Ultraman* toy (歩く怪獣シリーズ ウルトラマン, ART No.540, 1966), and the aircraft used by the SSSP, *The Jet VTOL* (ART No.556, 1966). "The first plastic model of the Tsuburaya mecha was released in the summer of 1966. Like the *Walking Monsters series*, it ran on electric power and could also move forwards and backward." (Chimatsuri, 2002, p.39, my translation[79]).The production of toys that would determine the coming media boom was a time-consuming process that required creating molds, designing materials, and marketing strategies in a collaborative effort between artists and designers.

Amid the Japanese broadcast domestic schedule, NHK included the British science-fiction series *Thunderbirds* (1965-1966), created by Gerry Anderson and Sylvia Anderson, from 1966 to 1967. The series used electronic marionette puppetry combined with miniature models and special effects sequences. Gerry Anderson developed plastering for moldings and the electronic marionette puppetry called *Supermarionation*, which involved using electronics to synchronize the puppet's lip movements with pre-recorded dialogues. Disney already used Animatronics, a form of robotics animation created by Walt Disney Imagineering, for their attractions and themed parks. However, because of Tokusatsu and the DIY qualities of Japanese productions, Thunderbird's mechanical puppets and devices were hugely successful in Japan. In 1966, the *Shogakukan Book* (小学館ブック) was the first monthly manga magazine specializing in TV Manga and Tokusatsu

[78] *Walking Kaiju Series* contained versions of the monsters: ゴメス (Gomes), ゴロ(Goro), ペギラ(Pegira), カネゴン (Kanegon), ガラモン(Garamon), パゴス(Pagosu),ドドラ(Dodora), ガラモン(Garamon). See details about these toy versions in Chimatsuri, 2002, pp.6-24. For the other monsters added after the release of *Ultraman* in the same toy collection, see pp.26-36.
[79] "1966 年夏頃に発売された円谷メカのプラモデル化第 1 号。「歩く怪獣シリーズ」と同じく電動によって走行し、前後進することも可能."

that serialized *Osomatsu-Kun*, *Obake no Q Taro*, and *Super Jetter* (1965-1966) created by Fumio Hisamatsu. In 1966, Nishi Hajime's manga *Thunderbirds* was serialized[80] from the September issue as one of the special effects monster stories that became a boom in 1966. In the same year, Shoji Otomo wrote a detailed account of the secret techniques involved in the making of *Thunderbirds* for *SF Magazine* 7 (11), saying:

> 1) The dolls are made of plastic and fiberglass and measure 20 inches (approx. 55 cm) in height, and other 3-inches dolls are available for miniature sets. 2) The movement of the doll's lips is free-automatic, with unique signals recorded in advance for the lines taken and controlled by a motor so that the doll's lips are triggered when the signal is issued during filming. This method is also used for head movements. 3) An industrial television camera is placed on the stage in the same position as the 35 mm camera (Aliflex). What is being filmed is displayed on a monitor television on the stage to ensure no mistakes are made. (Otomo, 1966, p.162-163, my translation[81]).

These examples show that the DIY construction mechanisms for miniatures, monster models, and animated characters made their way into specialized magazines. Finally, with the toys and model construction, the DIY approach arrived at the viewer, who could now have their models in addition to watching and reading about the show. This model ensured the opening of a wide range of public and made a profitable model of televised media, connecting design, company sponsorship, and merchandising products effectively. *Ultraman* and *Thunderbirds* were some of the first televised media to be made into toys and models within this strategy. In Hideaki Ito's (1999) mapping of the *Thunderbird* boom in Japan, he shows that already in December of 1996, the series plastic models were already available, overlapping with the *Ultra Q* and *Ultraman* toys.

> Until the release of the "TB No. 2" Plastic Model in December, many TV materials were available, and the Thunderbird's special feature in Shogakukan's was also a valuable source

[80] For a more detailed account of the publication and dissemination of *Thunderbirds* in Japanese magazines, see Ito Hideaki, 1999, pp.16-17.

[81] "1)人形はプラスチックとファイバー・グフスで製作され、せたけが 20 インチ(約 55 センチ) ほかにミニチュアセット用に 3 インチの人形もある。2)くちびるの動きはフリー・オートマチクで、あらかじめとったセリフに特殊な信号を録音しておき、撮影のとき、その信号が出ると人形のくちびるが始動するようリモートコントロールしている。頭の動きなどにもこの方法が応用されている。3) ステージには、35 ミリカメラ(アリフレックス)と同じ位置に工業用テレビカメラをおき、いまなにを撮っているかをステージ内のモニターテレビにうつしだして、ミスのないようにしている."

> of information. This was followed by the hugely popular No. 2, which made it possible to produce a series of TB Plastic Models and helped to create a huge boom. (Ito, 1999, p.22, my translation[82])

In the meantime, it can be said that taking advantage of the *Thunderbird* boom, Tsuburaya Productions devised a more mechanical depiction of *Ultraman* in *Ultra Seven* (1967-1968), which aired on TBS. Additionally, *Mighty Jack* (1968), the one-hour tokusatsu drama, was conscious of the children's market for the *mecha* plastic models pioneered by *Thunderbirds* toys. In 1967, *Marusan* changed its name to *K.K. Maruzan*, so *Ultra Seven* models were sold under this new name. *Ultra-Seven* leading character toy brought a straightforward innovation; the toy figure was fixed to the base using a suction cup, which could be pulled by spring tension, making it jump. "There were various *Maruzan* advertisements in children's magazines of the time. During the rebroadcasting of *Ultra Seven* in 1968 (every Thursday from 18:00), there was a period when as many as 120 spot commercials were intensively aired for a month." (Chimatsuri, 2002, p.61, my translation[83]).

In summary, *Ultraman* brought innovative elements, such as the narrative of the giant alien hero with the support weapons that would defeat the enemy with a special move, the use of the optical special effects, for example, the *Spacium Ray* move, and the texture and realism given to the monsters and machines. Since then, Ultraman has expanded to numerous series and movies, such as *Ultraman Ace*, *Ultraman Taro*, *Ultraman Leo*, *Ultraman 80*, *Ultram Great*, etc. After Tsuburaya's death, his son Noburu Tsuburaya took over the *Ultraman* franchise.

Tsuburaya Productions had been at the high of tokusatsu production. Still, in the 1970s, Toei Studios developed a new model for television media, including an increased collaboration between Manga, Tokusatsu, and Animation to create innovative works. Toei's *Kamen Rider* (仮面ライダー) series began in 1971, and it was around this time that the methodology of children's programming and merchandising began to flourish. To understand *Kamen Raider*, it's necessary to look at its creator, Ishinomori Shotaro, and his background as a manga artist that also was involved in animation.

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[82] "12 月の「TB2 号プラモ」 発売まで多くの TV 撮り写真資料も揃い、小学館の雑誌でのサンダーバード特集も貴重な資料になった。それが大好評の 2 号に続いて、TB プラモをシリーズ化可能にし て、大ブームを作る支えとなった."

[83] "当時の児童誌に掲載されたマルザンの広告各種。68 年の「ウルトラセブン」再放送時(毎週木曜 18:00~) には、1 ヶ月 120 本ものスポット CM が強化集中的に流された時期もあったという."

Since Tezuka was involved with multiple manga projects, he hired many assistants throughout his career, helping create a new generation of artists. Many famous manga artists of the sixties and seventies were his assistants, such as Fujio Akatsuka, Fujiko F. Fujio, Fujiko Fujio A., and Shotaro Ishinomori. Many of the next generations of animation pioneers worked in the *Astro Boy* animation, including Rin Taro (actual name Hayashi Shigeyuki), that directed *Galaxy Express 999* (1979), and *Metropolis* (2001), based on Tezuka manga of the same name. Yoshiyuki Tomino directed and assisted in many episodes of *Astro Boy*. Mushi Productions also inspired the creation of new animation studios, such as Studio Zero, created together by Fujiko F. Fujio, Fujiko Fujio A, Jiro Tsunoda, and Shotaro Ishinomori. These manga artists had worked together producing manga at the apartment building *Tokiwa-sō* (トキワ荘) in Tokyo. The building has been reformed and is an open museum in Tokyo.

Studio Zero also helped with the animation work of Mushi Productions, and they famously directed Astro Boy's *Episode 34*. This episode was considered a disaster by Tezuka since it was possible to identify each manga style of the artists involved, missing the unity of Tezuka's style in *Astro Boy*. In an interview with Fujiko Fujio A, he describes this moment: "The first animated cartoon that Mr. Tezuka asked me to draw was *Midoro ga Numa no Maki* from Astro Boy. When I showed the finished original to Tezuka-sensei, he said, "Uh-oh!" and looked to the heavens…I remember that." (Ishinomori Pro., 2018, p.46, my translation[84]). In 1961, Japanese overseas travel was not permitted for sightseeing, so Ishinomori got a travel license as a reporter sponsored by Shueisha to cover the *19th World Science Fiction Convention* (Seacon), held in Seattle in the USA. After covering the event, Ishinomori started to travel worldwide for seventy days. While in Zurich, Ishinomori wrote in a letter:

> As for American ten-cent comics, there are many of them in Japan, so there is nothing to inform you about them, but I thought it would be interesting to try this style (genre and theme-specific magazines) in Japan as well. Of course, it needs to be arranged in a Japanese way. This style is also popular in Europe, but since it is followed, it lacks freshness and

[84] "手塚先生から頼まれて、始めて僕が描いたアニメ漫画が「鉄腕アトム」の「ミドロが沼の巻」でした。それぞれ個性のある漫画家たちが描いたので、バラバラで統一がとれず、できあがった原画を手塚先生に見せた時、先生が「ウ〜ン！」といって天をあおいだ…のを覚えています."

> interesting aspects (I was surprised to see Disney books available in every country). (Ishinomori, 2008, p.177, my translation[85])

Returning to Japan, Ishinomori went on to publish two essential manga works, *Cyborg 009* (1964-1981) and *Rainbow Sentai Robin* (レインボー戦隊ロビン, 1965), both of which were adapted to animations, respectively in 1966 by Studio Zero, and 1965 by Toei Dōga. These two mangas presented the early idea of *Sentai*, that is, stories focusing on the reasons for fighting and, later the *Super Sentai* (squadron fights with multiple characters). In his travels worldwide, Ishinomori also researched how to develop his stories, and the travel experience in different countries appeared in his works.

Cyborg 009 introduced the first super-power team in the manga world. The manga has a long and varied publication in many magazines and gives a detailed account of war and the relationships between people of different races. The basic story outline is that Black Ghost, a terrorist organization that wants to start another World War to gain profit, has developed cyborg soldiers. However, nine cyborgs rebel against Black Ghost, scaping along with Dr. Gilmore, the lead scientist of the 00 Cyborg program. Each of the nine cyborgs has a unique past and identity.

The cyborg 001 is Ivan Whisky, the group's strategist, a baby known as the electric brain. Cyborg 002 is Jet Link, a former gang member; 003 is Françoise Arnoul, a French schoolgirl; 004 is Albert Heinrich, who lived in East Germany before the separation; 005 is Geronimo Jr., native American; 006 is Chang Changku, a former Chinese pig farmer; 007 is Great Britain; 008 is Pyunma, from Kenya, and finally 009 is Joe Shimamura, a Japanese with mixed cultural background. *Cyborg 009* and *Kamen Rider* have a lot of common points. Both main characters are converted cyborgs or augmented humans; they are unwanted by the evil organizations called Black Ghost and Shocker, respectively, and are also able to escape from these organizations with their newly acquired powers, thus becoming the only ones that can fight these enemies.

Mainichi Broadcasting System initially requested Toei Television Department to plan a children's program to be broadcasted in April 1971. The people involved in the project were

[85] "アメリカの"十セントコミック、については、日本にもたくさん入っておりますので、別にお知らせすることもないのですが、このスタイル(ジャンル、テーマ別専門誌)は日本でも試みたら面白いんじゃないかと思いました。もちろん、日本的にアレンジする必要はありますが。ヨーロッパでもこのスタイルは流行っておりますが、そのまま踏襲しておりますので、新鮮味と面白味に欠けます(ディズニーの本がどの国にも出回っているのには、いまさらながらアキレました)."

Yoshinori Watanabe from Toei, producer Toru Hirayama with Noboru Kato, and Ishinomori as the original author and character designer. For *Kamen Rider's* design, Ishinomori started with a character wearing a white helmet with red crosses and a white rider suit, but the project was abandoned. Ishinomori also thought about adapting the main character of his manga *Skull Man*[86] (1970), serialized in Weekly *Shōnen*.

However, *Skull Man's* story was that the parents of the leading character had been murdered, and with his newly acquired powers, he sought revenge. The theme was not suitable for children, so, Ishinomori and Toru Hirayama redesigned the main character of *Skull Man* to resemble a grasshopper. They thought that the children would relate to the insect's characteristics on the character. Ishinomori was involved in the planning and production of *Kamen Rider* (1971-1973) to *Kamen Rider Black RX* (1988-1989). *Kamen Rider* brought transformation (*henshin*), poses, and devices to the character, which created a transformation boom in tokusatsu for television.

Ishinomori also used the theme of the *outcast ninja*, in which *Kamen Rider* is a sort of anti-hero imprinted with augmented evil technology that has no choice but to fight the evil organization. Initially, the *Rider* was a human being that had to face other human beings. However, it gets more intricate because once the monster's enemies are defeated, they are converted to their original human form. Ultimately, *Kamen Rider* and the evil monsters are humans facing each other. So, the series is permeated by themes of justice, guilt, human roles, and societal pressures.

Although *Kamen Rider* is a recognized successful series, in the beginning, it struggled to get television ratings. Additionally, the suit actor Hiroshi Fujioka who was playing Takeshi Hongo, got into an accident while performing maneuvers with the motorcycle. At this time, the stunts performed by the actors were considered dangerous since they had to deal with real gunpowder explosions and bike maneuvers. While Hiroshi Fujioka was in the hospital, Toei decided on the appearance of No. 2 Kamen Rider, played by actor Tsuyoshi Sasaki. The series eventually became successful with the innovations of adding transformation poses and the introduction of Rider Girls. When Fujioka returned to the show after recovering, the series was already so popular that they also made a movie version.

From the Mainichi Broadcasting System team, Yōichi Sakon was in charge of *Kamen Rider,* and in 1972, he wrote an article about the show's background and success. Sakon starts by saying

[86] In 2007, studio Bones adapted *Skull Man* into animation, with direction by Takeshi Mori.

that he didn't expect the show to be so successful and that now, the show went from television to covering numerous children's daily necessities with *Kamen Rider* images. "(…) so much so that even I, the person in charge, am not sure of the exact number of items that filled the children's surroundings." (Sakon, 1972, p.12, my translation[87]). The items went from toys to school supplies, clothes, bicycles, sweets, and rice crackers; any product targeted to children would have been licensed to stamp *Kamen Rider* images. The program, which started with viewer ratings in the 8% range, rose to the 20% range in September of the same year, and letters from children would begin to pile up on the television station. Sakon tries to answer the question: Why did children love *Kamen Rider* so much?

> Masks have two aspects: one is that they are used for intimidation and self-aggrandizement against enemies, and the other is that they are used as an embodiment of human nature's transformative instinct that allows a person to transform into another personality, family, or animal by putting on a mask. (Sakon, 1972, p.12, my translation[88])

The idea that the mask conceals the real face, either for intimidation or to inspire a sense of belonging and transformation, made *Kamen Rider* appealing to children since they could imagine themselves as him. The mask is powerful because it plays with the idea of masking in society, with behavioral changes depending on the social situation. Much has been written about the mask concept in Japanese culture, but Bachnik defined two significant uses for simplicity. "This specifies that self and society are linked in practice by codes of conduct [*giri* and *ninjoo*] with two 'faces'; one social, the other emotional." (Bachnik, 1992, p.3). According to Bachnik, depending on the social situation, there would be certain flexibility between the social and emotional shift, with aspects of the self being more inclined towards the inside or inner world and aspects of the social order tending towards the outside world.

For Sakon, children's world had been permeated by a kind of salaryman anthropomorphism inserted in the distinction between "my home" and "outside." Since there was a high standard of adulthood, almost unattainable for children to achieve, the idea of a hero that could transform with

[87] " (…)至るまで担当者の私ですら正確な品数がわ からない程、子供たちの周辺を埋めつくしてしまいました."
[88] "仮面は、それ自体、敵に対する威嚇自己誇示という点と、もう一つは人が仮 間をつけることによって別の人格なり、科または動物に変身できるという人間本来の変身本能の具現として使用されるという二つの側面を持っています."

superhuman abilities would be especially appealing to them. This appealing aspect was counterbalanced by the fact that the main character of *Kamen Rider* was an ordinary human being captured and dragged to fight by this evil organization. So, the hero is sad about being a superhero. "We thought this would give children a new image of the hero of tomorrow, a tragic hero that would go against the grain of today's too-immediate, too-immediate world." (Sakon, 1972, p.13, my translation[89]). In fact, besides having the intention to aim the show at children, Ishinomori explains that a more profound level is embedded in the story correlating with the challenges of the 70s, like the use of technology, coal pollution, and other social-political problems.

> The 'Shocker' is the symbol of a distorted technological civilization. *Kamen Rider* is born as a result of the addition of this technology. Later, he becomes a guardian deity of nature (a warrior of peace), but in other words, he is the "poster child of technological civilization" or an ogre monster. Thus, it goes like this. Instead of nature (symbolized by grasshoppers) directly rebelling against humanity (symbolizing civilization), the "Kamen Rider" (half-grasshopper, half-human), that is, nature and man cooperate in fighting "evil." (...) It is human wisdom to coexist well with nature. *Kamen Rider* is the symbol of true civilization. (Ishinomori, 1994, p.262, my translation[90])

The foundation of Ishinomori's conception of *Kamen Rider* is the conflict between nature, civilization, and technology. Beyond the intention of its creator, the success of *Kamen Rider* created a problematic sphere in Sakon's perspective. "This boom has spawned a new *monster* out of the world of television programming and into a field we can no longer reach, and it has grown into a monster of epic proportions." (Sakon, 1972, p.15, my translation[91]). Sakon believes that *Kamen Rider* became a monster from television to merchandising that is impossible to manage or control. From 1972 to a more contemporary view, Ōtsuka & Steinberg (2010) compared *Kamen Rider* products and Bikkuriman Chocolates. In *Kamen Rider's* case, the images of the character

[89] "即物的な、あまりにも即物的な現代に、むしろ逆行する悲壮さ、それがある新しい明日のヒーロー像を子供たちに与えることになるのではないかと志向した次第です."

[90] "「ショッカー」とは、歪んだ技術文明の象徴である。その技術の付加によって誕生するのが「仮面ライダー」だ。後には自然の守護神（平和の戦士）になるが、言うなれば"技術文明の申し子"あるいは鬼っ子のモンスターである。したがって、こうなる。自然（バッタによる象徴）が直接人類（文明の象徴）に反旗を翻すのではなく、『仮面ライダー』（バッタと人間のハーフ）、即ち自然と人間が協力して"悪"に立ち向かう……。自然と上手に共生することが人間の叡智。『仮面ライダー』こそが "真の文明"のシンボルなのだ."

[91] "このブームはテレビ番組の世界からはなれて、いまやわれわれの手のとどかない分野に新しい"怪獣"を生み、それを巨大な怪獣にまで成長させました."

adorned packages, so children bought products because they contained narrative elements from the show they loved. In the case of the Bikkuriman Chocolates, there was no original series on which they were based. They were simply printed characters made for a chocolate brand. After the product's success, an animation was made.

Ōtsuka & Steinberg's argument is that the consumption model was different because since the children were collecting the Bikkuriman Chocolate characters, the narratives started to emerge, triggering the product's success and the subsequent animation productions. "Child consumers purchased stickers, which were the differential fragments of information. Therefore, what the candy maker was "selling" to children was neither the chocolates nor the stickers, but rather the grand narrative itself." (Ōtsuka; Steinberg, 2010, p.107). They conclude by saying that commodity and consumption can merge into one. Consumers can take the process into their hands and establish different relations beyond what was intended for the product.

This practice is possible, to a certain extent, because products like *Kamen Rider* or other series are simultaneously everywhere, creating a need to consume or develop narratives. In such conditions, there is a predisposition to assume that characters in these products come from a show or animation. In a sense, children are exposed to the universe of narrative-making, creating new possibilities for characters. Although these consumption patterns seem like different processes, they are deeply interconnected. The aesthetic and commercial patterns brought by *Ultraman* and *Kamen Rider* helped remodel the tokusatsu genre, and its success challenged the animation field.

The next section of this research will demonstrate how in the sixties and seventies, the composition experimentalism between live-action and animation would take place. The experimentalism shows that artists were discovering and established the limits and capabilities of each genre and how they could compose with both.

2.3. Experimental Composition techniques in the early '70s

The idea of mixing animation techniques, such as utilizing cel and stop motion together with live-action, has been present since moving image production began. Optical toys and animated strips were pervasive, and trick films and effects were used in various movies. However, this scenario did not disappear, and there are several examples of compositions between animation and tokusatsu in the 1960s. For example, the series *Dai Ninjutsu Eiga Watari* (大忍術映画ワタリ, 1966) by Toei Doga was the first tokusatsu produced by the company (see Figure 2). Toei had the Educational Film Department, giving domestic and independent animation space to develop. They utilized their animation strengths to combine animated scenes with live-action footage. Nikkatsu soon joined with their tokusatsu movie *Gappa: The Triphibian Monster* (大巨獣ガッパ, 1967), directed by Haruyasu Noguchi. In the same year, Shochiku produced *The X from Outer Space* (宇宙大怪獣ギララ, *Uchū Daikaijū Girara*), directed by Kazui Nihonmatsu. The already mentioned series *Vampire* (1968) from this period, produced by Mushi Productions, also mixed cel animation with live-action.

Figure 2 Dai Ninjutsu Eiga Watari, Toei Doga (1966)[92]

In *Godzilla vs. Hedorah* (1971), directed by Yoshimitsu Banno, the environmentalist message comes forward with the image of *Hedorah*, a monster born from pollution. The movie incorporated the psychedelic culture of the 70s, and they inserted an animated segment. The cause

[92] Image reference from '*Dai Ninjutsu Eiga Watari (gekijō-ban)*' (大忍術映画ワタリ(劇場版). (2004). Sadao Funatoko (dir.) Japan: Toei Bideo, (1h26min) (DVD).

of the pollution problem lies in the disposal of unprocessed hazardous materials, which, if traced back, leads to the problem of energy extraction through combustion, especially fossil fuel power generation. Therefore, the positive image of nuclear energy is enhanced by environmental issues, but nuclear power's negative image also persists.

In the 1970s, Tsuburaya Productions would venture into image experimentalism. At first, they produced two pilot shorts movies that used cel animation, dolls and stop-motion, and miniature sets. First, *Planet of the Giants* (巨獣惑星, *Kyojū Wakusei*, 1974, 2min 40sec) was produced with cel animation, miniatures, and stop motion in search of a creative visual expression (see Figure 3). In 1975, *Tsuburaya Three-dimensional Anime* (円谷立体アニメ, *Tsuburaya Rittai Anime*, 1975, 2min 40sec) was produced with cel animation, puppet stop motion, and live-action (see Figure 3). A man wanders into a dune, is chased by a monstrous puppet bird, and fights it but is swallowed by a fissure in the earth. The man falls into a cel-animated world inhabited by a giant girl. There are fantastical elements, such as actual actors being animated and being chased by puppet-animated birds. As such, this short leaves a strong impression.

Figure 3 (above) Planet of the Giants (1974), (under) Tsuburaya Three-dimensional Anime (1975)[93]

These first two productions were pilot versions where they could test different image compositions. After gathering production experience, they made *Dinosaur Explorers Born Free*

[93] Image reference from Toei Video website, see https://www.toei-video.co.jp/special/tsuburaya-kyouryu/ (Accessed 2022.10.06).

(恐竜探険隊ボーンフリー, 1976-1977, 25 ep.), the first series utilizing composition methods that mixed live-action, miniatures, and animated characters. The characters are represented in cel animation, but the other environment elements include miniatures and stop-motion. Almost at the same time, Tsuburaya Productions launched a different experiment, *Pro-Wres no Hoshi Aztecaser* (プロレスの星 アステカイザー, 1976-1977), created by Go Nagai and Ken Ishikawa (see Figure 4). It utilizes mainly live-action images; however, at the height of the battle, the pro wrestling character and the surroundings are transformed into cel animation, making it possible to represent otherwise impossible physical movements.

Figure 4 Pro-Wres no Hoshi Aztecaser (1976)[94]

Figure 5 Dinosaur War Izenborg (1977)[95]

[94] Image reference from '*Urutora tokusatsu pāfekuto mukku vol.26 Sutāurufu/ puroresu no hoshi asutekaizā (Kōdansha shirīzu mukku)*', (ウルトラ特撮 PERFECT MOOK vol.26 スターウルフ/プロレスの星 アステカイザー (講談社シリーズ MOOK), 2021. Tokyo: Kodansha.

[95] Image reference from '*Kyōryū dai sensō aizenbōgu vol.1'* (恐竜大戦争アイゼンボーグ VOL.1). (2013) Kanji Otsuka, Kazuho Mitsuda (dir.) Japan: Toei Co., (2h5min) (DVD).

Aztecaser is in line with *Tiger Mask* (1968-1971), a manga published by Ikki Kajiwara and Naoki Tsuji that also received an animation adaptation (1970-1971) by Toei. The character is recognizable by the tiger mask and the combination of jump attacks and martial arts. In real life, New Japan Pro-Wrestling licensed the character and created a real-life *Tiger Mask* to participate in professional wrestling fights. These almost simultaneous series, *Dinosaur Explorers Born Free* and *Aztecaser,* mixed live-action and animation composition, but each emphasized them from a different perspective. *Dinosaur Explorers Born Free* was the first production of a series that would be called the *Tsuburaya Dinosaur Trilogy*, which was followed by *Dinosaur War Izenborg* (恐竜大戦争アイゼンボーグ, 1977-1978) (see Figure 5) and *Dinosaur Squadron Coseidon* (恐竜戦隊コセイドン, 1978-1979). In *Izenborg*, the humans transform into the giant hero Eisenborg, and the dinosaurs become the enemies to be fought. The technique that combined the animated parts and live-action into a visual unity was called "three-dimensional anime" (立体アニメ). By calling it three-dimensional anime, they aimed to create a unity of elements, no matter the origin of capture, be it camera or drawing, and compose a world that remained tangible. Contemporary 3D CGI consists of animated serialized images and is often used in live-action, animation, or a combination of the two. Perhaps the experimentalism in the 70s anticipated several characteristics of image composition before different digital techniques were available because the artists were exploring all possibilities. However, the final production of *Coseidon* was made entirely in live-action, utilizing special effects but not animated scenes. Perhaps it was deemed too costly or difficult to continue these experimental practices.

The emphasis on dinosaurs and monster creatures in these experimental productions was linked to *Godzilla* and *Ultraman's* monster boom. In such a context, monsters had a tremendous impact on how people in the 1960s viewed dinosaurs. At that time, there was no small number of books that juxtaposed monsters, imaginary creatures, and dinosaurs, which used to exist in the past. The narrative created was that the dinosaurs were creatures of great destructive power and supernatural ability, just like the monsters.

In 1965 the *Shogakukan Nyumon* Encyclopedia Series launched the *Introduction to Ultra Monsters* (ウルトラ怪獣入門) and *Introduction to Illustrated Monsters* (怪獣図解入門). These two books were edited by SF film critics Shoji Otomo and Tsuburaya Eiji. Following the strategy of creating encyclopedias, in 1967, the book *World Encyclopedia of Monsters* (世界大怪獣事典)

is then edited by dinosaur specialist Ikuo Obata, Tsuburaya Eiji, and Tohl Narita as a designer. This was not only an illustrated book on monsters but was compiled to be a teaching resource based on historical facts about dinosaurs. The book consisted of three parts, first about dinosaurs, second about UMA (Unidentified Mysterious Animal), and finally about *Ultra* monsters. These books offered a way to learn about science and enjoy monsters simultaneously, being an influential factor in creating a public of children and parents.

In *Ultraman*, episode ten, "The Mysterious Dinosaur Base," the monster Jirahs is a survivor of the Loch Ness dinosaurs brought to Japan. Still, it breathes hot rays from its mouth and mirrors Godzilla. They utilized parts of Godzilla's suit to create Jirahs. Nevertheless, the obsession of Professor Nikaido, who raised Jirahs, to bring the dinosaurs back to life is a theme reminiscent of *Jurassic Park* (1993). In the movie *Legend of Dinosaurs & Monster Birds* (恐竜・怪鳥の伝説, 1977), directed by Junji Kurata, prehistoric dinosaurs return and terrorize a community close to Mount Fuji. In the scenes of dinosaurs appearing in Saiko Lake and threatening people on boats or closer to the water, it is clear that the movie was inspired by the terror-like attack of *Jaws* (1975), directed by Steven Spielberg.

During the seventies, artists created complex hybrid image compositions between these media forms, inspired by the multiple experiments carried out by their predecessors. By combining these media formats, artists stretched each media's weaknesses and strengths, experimenting with their aesthetic possibilities and reinforcing their representation range. Additionally, the idea of transformation pervasive in animation and tokusatsu was explored as a bridge between the worlds, *i.e.*, celluloid characters that transform into live-action and vice-versa. The seventies marked the initial boom of *Super Robot Anime*. As animation programs were competing with successful tokusatsu shows, they had a tremendous impact on the following style of tokusatsu. The following section will show the development of *Super Sentai* and *Metal Heroes* and the animation's aesthetic influence on them. Especially with artists transiting between fields to bring innovative aspects of aesthetics and narrative potential.

2.4. Super Sentai and Metal Heroes

The presence of giant robots in tokusatsu can be traced back to *Mogera*, which appears in *Earth Defense Force* (1957), the giant robot that embraces Egypt iconology in *Giant Robo* (1967, Toei), and *Jet Jaguar*, the advanced robot created by the inventor Goro Ibuki that appears in *Godzilla vs. Megalon* (1973). Ishinomori already had created the long-running manga *Cyborg 009*, which dealt with squadron fighters and solo heroes in *Kamen Rider* that sought justice and coexistence in society. Inspired by his travels, Ishinomori would establish the squadron fighting teams in *Himitsu Sentai Gorenger* (秘密戦隊ゴレンジャー, 1975-1977) and *J.A.K.Q. Dengekitai*, (ジャッカー電撃隊, 1977).

The five characters were selected because "This was an attempt to bring elements of the Kabuki masterpiece 'Shiranami Gonin Otoko' and other detective dramas popular at the time into tokusatsu programs." (Keibunsha Co., 2002, p.12, my translation[96]). Along with the idea of a group hero, it was decided to use colorful primary colors to give the characters individuality. The unique heroes before and after the transformation, various monsters, elaborate special moves, flying mecha, and effects won the support of children, and *Gorenger* became a long-running series. The series also employed another theatrical measure: announcing their names and posing in front of the enemy. "In *Goranger*, the five characters are impressive when they announce themselves as *all five Gorangers*. This style of posing for the enemy and announcing oneself like a warlord is often seen in period TV dramas." (Keibunsha Co., 2002, p.13, my translation[97]).

J.A.K.Q. Dengekitai took over the group hero line and spy action of *Goranger* and added dramatic and mechanic elements centering on the tragic heroes who became cyborgs. In this film, particular emphasis is placed on the protagonist's machine, the space machine. Ishinomori also created *Daitetsujin 17* (大鉄人 17, 1977), based on giant robot battles to produce a definitive, realistic use of effects. The project started in the summer of 1976 when giant robot animation was booming, and this know-how was later passed on to the giant robots of the *Sentai* series.

[96] "これは歌舞伎の名作『白波五人男』や、当時人気があった刑事ドラマなどの要素を特撮番組に持ち込もうとする試みであった."

[97] "「ゴレンジ ャー」でも「5 人揃ってゴレンジャー」と名乗りを上げる演出が印象的だが、敵に対してポーズを取り、戦国武将のように自らを名乗るというスタイルはテレビ時代劇で多く見られる演出法である."

Following the use of more mechanisms in the Super Sentai series, *Spider-Man* (スパイダーマン, 1978-1979) presented the spider-man character piloting the giant robot *Leopardon* to fight giant monsters. The series was produced by Toei and loosely based on the Spider-Man comics. The partnership between Toei and Marvel would continue with the Sentai series, *Battle Fever J* (1979-1980), which also introduced the *Battle Fever Robo*, a fighting robot. The motif of this film was inspired by the word fever from the movie *Saturday Night Fever* (1977). "At the time, Toei had a contract allowing the use of characters from the Marvel Comics Group, including *Spider-Man*, and *Battle Fever J* were based on American comics such as Captain America and Ms. Marvel in the planning stages (...)." (Keibunsha Co., 2002, p.15, my translation[98]).

From *Battle Fever J*, the Super Sentai format has been expanded to include monsters that, once defeated, regenerate into a giant (i.e., become a monster), and the heroes pilot the giant robots to fight them off. The members also would represent different countries, *Battle Japan*, *Battle France*, *Battle Cossack* (Soviet Union), *Battle Kenya*, and *Miss America*. Each suit would have a flag embroidered on the chest and stereotypical characteristics of those countries in the characters.

By the 1980s, the success of *Gundam* (1979-1980) created a wave of interest in depicting robots more realistically. As a result, *Denshi Sentai Denjiman*, (電子戦隊デンジマン, 1980-1981) produced by Toei improved the representation of the robots in Super Sentai. "One of the main features of the work, the giant robot, has a gimmick that transforms from the non-transforming Battle Fever Robot of the previous work into a *Denji Fighter* (fighter aircraft) → *Daidenjin* (robot), presenting a more advanced image of the hero robot." (Keibunsha Co., 2002, p.28-29, my translation[99]). They also inserted a cosmic element since the five members could be descendants of the Denji aliens, as they defend Earth against the Vader clan. The series solidify some of the iconic conventions that came to identify the *Super Sentai* genre.

The conventions such as the appearance of the monsters, the fighter's transformations, and their name pose enunciation; the action fights where the monster is defeated once, this is followed by the monster becoming a giant. So, the fighters assemble, riding the giant robot to defeat the

[98] "当時の東映は『スパイダーマン』も含めて、マーベル・コミックス・グループのキャラクターを使用できる契約を交わしており、「バトルフィーバ J」も、企画段階ではキャラクターのベースを「キャプテン・アメリカ』『ミズ・マーベル」といったアメリカン・コミックに求め, (…)."

[99] "作品の目玉のひとつである巨大ロボットに関しては前作の変形しないバトルフィーバーロボから「デンジファイター(戦闘機)→ダイデンジン(ロボット)」と変形するギミックが取り入れられ、より一歩進んだヒーローロボット像が提示されている."

monster again; the fighter's epilogue usually follows the end of the episode. These steps would become a standard that the subsequent *Super Sentai* series would follow. One exception to these standardized conventions was *Taiyo Sentai Sun Vulcan* (太陽戦隊サンバルカン, 1981-1982), which utilized animal motifs for the first time, with only three members, and transforming robots. By the time *Dai Sentai Goggle V* (大戦隊ゴーグルファイブ, 1982-1983) was made, the production team had the goal of developing the super sentai genre into a long-running series.

Besides the *Super Sentai* series, Shotaro Ishinomori's tokusatsu works at the beginning of the 70s include *Android Kikaider* (人造人間キカイダー, 1972-1973, Toei), and *Inazuman*, 1973-1974, NET). He also contributed to robot representation with manga turned tokusatsu, *Robot Detective* (ロボット刑事, 1973), the tokusatsu robot comedies *Do your Best! Robocon*, (がんばれ!! ロボコン, 1974) and *Robot 110* (ロボット 110 番, 1977). In 1981, *Robot 8-chan* (ロボット 8 ちゃん) was made in the *Robocon* style, also based on Ishinomori's original work.

As the *Super Sentai* genre combined more mechanical elements and robots, this gave way to the birth of a new subset of the tokusatsu style, the *Metal Hero*. When *Space Sheriff Gavan* (宇宙刑事ギャバン, 1982-1983) was launched, it brought new ideas, such as metallic combat suits and "vapor deposition" to complete the transformation instantly. Later, it became known as the first *Metal Hero* production.

The fifth super sentai series *Kagaku Sentai Dynaman* (科学戦隊ダイナマン,1983), was named *Dynaman* as a combination of the words dynamite and dynamic. To create such an active scenario, they utilized a large amount of gunpowder since the five colorful explosions were a crucial point in the hero's name-calling pose scene. For this production, they appointed Yutaka Izubuchi, a designer who had worked mainly in the animation world. Producer Takeyuki Suzuki was responsible for animations, such as *Tōshō Daimos* (1978), where Yutaka Izubuchi made his artistic debut. Suzuki was the producer of *Future Robot Daltanious* (1979-1980). Because Takeyuki Suzuki was exposed to innovative designs in the animation world, he decided to bring animators to see if they could apply their techniques into the tokusatsu genre.

They introduced the character Megiddo (Dark Knight), a beautiful enemy inspired by Tadao Nagahama's introduction of drama in the series *Super Electromagnetic Machine Volts V* (超電磁マシーン ボルテスＶ). Additionally, they brought the idea that the show would become popular if the enemy and the hero were attractive. However, from episode 9 onwards, the airing

time changed from 30min to 25 min due to a change in the schedule of the TV stations. “Toei was aware of this shortening and chose ‘increasing the overall tempo’ rather than simply cutting the drama part. As a result, the name-calling scene became speedier, and the series unique production method was completed.” (Keibunsha Co., 2002, p.59, my translation[100]). This created a dynamic cut of scenes that became the characteristic cut of frames tempo in the *Super Sentai* series.

Choudenshi Bioman (超電子バイオマン, 1984-1985) followed the same strategy and, in doing so, increased the number of female protagonists to two since they followed Nagahama’s approach, counting on the female audience to make the series a success. The series was structured to be enjoyed as an epic drama over the course of a year. As such, the Robot trilogy animation series directed by Nagahama influenced not only the drama-like structure of the series but also the overall aesthetic of Izubuchi’s design work. “In *Bioman*, Mr. Izubuchi went beyond mere design, proposing new characters deeply involved in the storyline, as shown on page 62, and was also deeply involved in setting the backgrounds of the characters and the worldview of the story.” (Keibunsha Co., 2002, p.60-61, my translation[101])

Another critical element of this series is the innovation in using materials for the character’s suits. “Starting with *Goranger* and continuing with the previous *Dynaman*, hero suits were made of cotton and nylon, but the company Rainbow Zoukei Kikaku, in charge of modeling, found a new material to replace them: the synthetic fiber ‘opecot,’ which was used in *Bioman*.” (Keibunsha Co., 2002, p.61, my translation[102]). The opecot material was used for women’s swimwear and had ideal elasticity to endure action sequences. They also chose it because is heat-resistant, so sparks would not burn stunt performers in the suit from the explosions. The size of the masks and technology of the mask modeling used FRP (Fibreglass Reinforced Plastics), a synthetic resin in which glass and carbon fibers are embedded as reinforcement. FRP was used in *The Three Treasures* (日本誕生, 1959) for the first time, as already mentioned. As such, this technology also migrated to the tokusatsu television series since *Goranger*. The materials were also used for robot suits.

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[100] “東映サイドはこの短縮を意識し、単純にドラマ部分をカットするのではなく「全体 テンポアップしていく」という方法を選択。結果として名乗りシーンがスピーディーになるなど、本シリーズ独特の演出方法が完成していく.”

[101] “出渕氏はこの「バイオマン』では単なるデザイ アーの域を超えて、ページにあるようなストー リーに深く関わる新キャラクターを提案したり、キャラクターの背景設定、物語の世界観設定などにも深く関わっている.”

[102] “「ゴレンジャー」に始まり前作『ダイナマン』まで、ヒーローのスーツは基本的に綿とナイロンを多用したものであったが、それに変わる新素材として造形を担当するレインボー造型企画が探し出してきたものが「バイオマン」から採用された合成繊維「オペコット」である.”

Figure 6 (left) Flashman (1986) and (right) Zambot 3 (1977)[103]

The introduction of robots was so successful that in *Chōshinsei Flashman* (超新星フラッシュマン, 1986), they introduced a second and new robot in the series. Creating robotic mechanisms for the series was costly; however, it was deemed necessary for innovative drama in a long series. The second robot, *Titan Boy*, was designed as a fast-moving robot to differentiate it from the *Flash King*. The cost increases because two suit robots are made for each robot, one for action shots and another for close-up shots. Most of the close-up costumes are extremely heavy and difficult to walk in. The suits used for action also differ because they are made of soft material, mainly urethane, instead of the FRP to give more mobility.

As seen in Figure 6, *Flashman* also brought a mask that used goggles that made the face of the hero visible, a feature incorporated from anime series, such as *Zambot 3*. "This technique was often used in animation, but in tokusatsu, it was structurally and technically difficult to incorporate gimmicks into the masks, so it was avoided. In *Flashman*, it was impossible to create an effect in which the entire front of the mask was open, so the idea of opening and closing only the goggles was adopted." (Keibunsha Co., 2002, p.65, my translation[104]).

Miniature work was time-consuming and physically intense. In the early days, they used silk threads to move the miniatures of cars and mechanisms (Keibunsha, 2002). After radio-controlled motors were available, they changed the miniature manipulation method to motor-

[103] Image references (left): '*Sūpā sentai ofisharu Mook 20 seiki 1986 chōshinsei furasshu man (Kōdansha shirīzu mukku)*', 2019, Kōdansha. (right): Hikawa, Ryūsuke. (1997) '20-Nen-me no zanbotto 3 (otaku-gaku sōsho)'. Tokyo: Ohta Publishing.

[104] "この手法はやはりアニメーションなどではよく使われた演出だが、特撮ではマスクにギミックを仕込む のが構造的・技術的に難しく敬遠されていたのである。この 「フラッシュマン」 ではマスク前面をすべてオープンにするという演出は造形的に無理だったため、ゴーグルのみ開閉するというアイデアが 採用されている."

controlled means. In 1987, *Hikari Sentai Maskman* (光戦隊マスクマン) was the first squadron to combine five machines in the transformation.

> However, the five-unit combination was realized in *Maskman* due to the improvement in toy manufacturing technology, which made it possible to reproduce the gimmick of the five-unit combination and the economic boom that occurred during the bubble period. In addition, toy sponsors moved their production bases to overseas factories where wages were lower, which helped to keep the toys low production costs. (Keibunsha Co., 2002, p.66, my translation[105])

Among the people who worked in the development of the *Super Sentai* and *Metal Hero* series, I want to highlight that some of the future directors of the 90s and 2000s, that started working around the mid-80s. Hiroshi Butsuda (佛田, 洋) and Toshio Miike (三池, 敏夫) were from Kumamoto, and they moved together to Tokyo. They both participated in the *Tokusatsu Research Institute,* learning how to make tokusatsu effects under Tetsuzo Ōsawa and Nobuo Yajima, the founder of the Institute. They started their apprentice as art staff in many of Toei's tokusatsu series. "*Interviewer*: In the case of *Bioman*, there are quite a few scenes of *Biorobo* on the special effects set. For example, in the scene where *Biorobo* is piling up stone walls. *Miike*: Yes, we did this stone wall. I think Butsuda-kun and I made it together." (Fukuoka Tokusatsu Zadankai, 2020, p.30, my translation[106]). For the *Super Sentai* series *Dengeki Sentai Changeman* (電撃戦隊チェンジマン, 1985-1986) and the *Metal Hero* series *Space Wolf Juspion* (巨獣特捜ジャスピオン, 1985-1986), they had a shooting schedule, as Toshio Miike explains in this interview:

> We'd finish the *Super Sentai* once, according to the broadcast order, and then we'd connect it with something like *Metal Hero* and do it all through. It was always a solid sequence. At this stage, Osawa-san had already left the Institute, and Fujita-san became the designer. Mr.

[105] "だが、この『マスクマン』で 5 機合体が実現した背景には、玩具製造の技術力が向上し 5 機合体のギミックが再現できるようになったこと、時代 的にはバブル期に突入して景気が良くなったこと があげられる。またスポンサーである玩具メーカーが賃金の安い海外工場に生産拠点を移したため、玩具の製造原価が低く抑えられるようになったという背景もあった."

[106] "—特撮のセットでの撮影となると、『バイオマン』だとバイオロボのシー ンは結構多いですね。バイオロボが石垣を積んでいるシーンとか。三池: そうそう、この石垣はやりまし た。多分佛田君と僕でつくりましたね."

> Fujita also had a long career and could do on-site drawings and decorations. Mr. Fujita taught Butsuda-kun and me how to make miniatures. (Fukuoka Tokusatsu Zadankai, 2020, p.40, my translation[107])

Yasuo Fujita[108] (藤田, 泰男) worked as a tokusatsu designer and animator in works such as *Phoenix* (火の鳥, 1978), *Dengeki Sentai Changeman*, and others. According to Toshio Miike, he was an incredible figure that taught him not only special effects art but also camera work involved in tokusatsu. Toshio Miike also worked part-time for *The Return of Godzilla* (1984). After he left the *Tokusatsu Research Institute*, Miike worked on the movie *Gunhead* (ガンヘッド, 1989), directed by Masato Harada and Koichi Kawakita, which was a joint venture between Sunrise and Toho. After that, Toshio Miike went to Hong Kong and to the U.S to shoot *Ultraman, The Ultimate Hero series* (1995), where he also worked with Shinji Higuchi, whom he holds deep admiration, as he reveals in this interview.

> Higuchi worked on DAICON films with people who could draw various kinds of pictures, so I think Higuchi is one of the best directors in Japan in terms of his drawing ability. He was highly acclaimed for his movie *Gamera: Guardian of the Universe* in 1995. He later became a full-length film director, leading to *Shin Godzilla* in 2016 when the world finally recognized the monster movie genre. (Fukuoka Tokusatsu Zadankai, 2020, p.52, my translation[109])

Toshio Miike worked in *Denkou Choujin Gridman* (電光超人グリッドマン, 1993-1994) created by Tsuburaya Productions. The series is about three kids discovering that their superhero video game it's possessed by *Gridman*, which merges with Naoto to fight the digital monsters. The series was shot in video format instead of film, and they struggled to convey the electronic

[107] "放送順に合わせて、戦隊を一回終わらせて、次にメタルヒーローみたい なことで繋げて通しでやる。それもずっとベタでついていました。この段階でもう大澤さんは研究所を辞めていて、藤田さんがデザイナーになっています。藤田さんも結構キャリアを積まれている方で、図面も出来るし現場の飾りも出来るんですね。作り物も腕がある人で、僕も佛田君もミニチュアづくりの ノウハウを藤田さんから教えてもらいました."

[108] Yasuo Fujita official website: http://dkohboh.la.coocan.jp/index html (Accessed 2022.05.05). Later in his career, he became involved in CGI animation as well.

[109] "樋口さんは DAICON フィルムとかで色々絵が描ける人たちと やっていましたから、絵を描く能力で言うと日本の監督の中でもトップだと思いますよ。その樋口さんが特技監督としてビジュアル重視の画づくりをやるようになって、一九九五年の『ガメラ 大怪獣空中決戦』で高く評価されて、その後本編の監督もやるようになって二〇一六年の『シン・ゴ ジラ』に繋がって、ようやく怪獣映画というジャンルが世のなかに認められる流れになるわけです."

computer world utilizing miniatures. Miike says: “I had to make miniatures and make them glow in various ways, so I used fluorescent lights, small wheat bulbs, and optical fibers. I tried all kinds of ways to express the cybernetic world, but the finished product with videography doesn’t seem to have the same sense of scale.” (Fukuoka Tokusatsu Zadankai, 2020, p.52, my translation[110]). DiC Entertainment adapted the series to the US public and named it *Superhuman Samurai Syber-Squad*.

Hiroshi Butsuda was also involved in productions since *Bioman* (1984). He directed episodes of *Ninja Sentai Kakuranger* (忍者戦隊カクレンジャー, 1994-1995), and *Kyūkyū Sentai GoGoFive* (救急戦隊ゴーゴーファイブ, 1999-2000), among other series. In the 2000s, in the *Mirai Sentai Timeranger* (未来戦隊タイムレンジャー, 2000-2001) and *Hyakujū Sentai Gaoranger* (百獣戦隊ガオレンジャー, 2001-2002) series, helping to introduce CGI in some scenes. Butsuda says that there was a demand for visual expression using digital technology around the 2000s. “Furthermore, a couple of years earlier, the efforts of Director Onoue, who had been promoting the digitalization of the tokusatsu institute at the time, had borne fruit, and it had become possible to do computer graphics in-house.” (Butsuda, 2012, p.150, my translation[111]).

Katsuro Onoue entered Toei around 1985 and worked on many tokusatsu series. Onoue helped build technical and aesthetic knowledge that helped flourish new ideas for the 2000s. *Timeranger* used about half miniatures and half CGI; for *Gaoranger*, made just one year later, they switched to full CGI. “It’s not a case of saying that CG is better for everything. I know I keep repeating, but miniatures have the qualities of miniatures, and computer graphics have the qualities of computer graphics, and what is important is which method is best suited to what you want to express.” (Butsuda, 2012, p.151, my translation[112]). Butsuda also became a tokusatsu director in *Kamen Rider Ryuki* (2002) since he already had experience making CGI. Butsuda also went on to direct *Kamen Rider 555* (2003) and *Kamen Rider W* (2009-2010), among other titles, well into the second decade of the 2000s. He is also known for incorporating traditional and digital elements in the image, depending on the texture that he wants to achieve.

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[110] “ミニチュアをつくって、色々と光っていないといけませんから、その中に蛍光灯を入れたり、小さな麦球を入れたり、光ファイバーも使いましたかね。本当にあの手この手で電脳世界を表現しようと試みましたが、ビデオ撮影だと仕上がりが、どうしてもスケール感が出なくて残念な感じなんですよね.”

[111] “さらに 2、3 年前から、当時特撮研究所のデジタル化を推進してきた尾上監督の努力が実を結び、社内でも CG が出来るようになってきていたんです.”

[112] “何が何でも CG がいいかと言えばそんなことはないですから。何度も同じことを言うけ ど、ミニチュアにはミニチュアの、CG には CG のよさがあって、大事なのは表現したいことにどの手法が合っているかということですよね.”

> I have worked on both *Sentai* and *Rider*, so I understand the difference well, but Heisei Rider's realistic tokusatsu, in which CG is combined with real scenery, fits its worldview. However, the fun of *Sentai* tokusatsu lies in something else, and I think it would be good to explore new ways of presenting it within the conventional way of doing things. (…). At first glance, it seems that we are moving in the opposite direction of the current trend, but on the contrary, I think we are one step ahead of them. (Butsuda, 2012, p.178, my translation[113])

Butsuda's conception is shared by different artists who see miniatures or set-making as creating a worldview. More accurately, it comes in the direction that is necessary to understand the material's texture, weight, and coordination before making it to CG. In a conversation between Butsuda and Hideaki Anno, there is an interesting take about creating sets: "Butsuda: But why do you insist on recreating miniatures for an anime? Anno: The point is to reproduce them. We called the backgrounds sets, even though they are computer graphics (everyone laughs)." (Butsuda, 2012, p.23, my translation[114]). The difference in aesthetic conception is also at play, in which there are different expectations according to the genre; however, they can also be broken to achieve different results. Hideaki Anno goes further in his elaborations, saying: "The good thing about tokusatsu scenes is that we can put foreign objects into real space. I like the sense of discomfort of seeing a person in a miniature space in a composed scene." (Butsuda, 2012, p.25, my translation[115]).

The sense of discomfort or clash between reality and fiction scenarios or objects is at the core of tokusatsu. Perhaps because the DIY roughness quality of its making has become an aesthetic style, something that viewers, as Anno, enjoy. The characteristic of embracing image discomfort as part of creation and viewer experience is one of the distinctive aspects permeating in the Japanese media environment.

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[113] "僕は職隊とライダーを両方やっているから違いがよくわかるんだけど、平成ライダーはあくまで実景に CG を合成するリアル指向の特撮が世界観に合っています。でも、戦隊特撮の面白さはそれとはまた別のところにあるわけで、従来のやり方の中で新たな見せ方を模索するのがいいんじゃないですか。(…) 一見、時流とは真逆に進んでいるようで、逆に我々のほうが一歩リードしているんじゃないかと僕は思っています."

[114] "佛田: しかし、アニメなのになぜミニチュアの再現にこだわるんだという(笑)。庵野: あれを再現するところに意味があるんで(きっぱり)。背景を「セット」って呼んでましたからね、CG なんですけど(一同笑)."

[115] "特撮場面のいいところって、現実空間の中に異物を入れることが可能なことだから、ミニチュアの空間の中に合成で人が入っているあの違和感がすごくいい."

2.5. Monster Club, the beginning of DIY fan activities

The establishment of the science fiction genre in Japan was marked by the aesthetic exchange between tokusatsu and animation. Mainly by the artists working in the productions and learning the know-how of artmaking by sharing their knowledge. However, this scenario also cultivated a public or viewer dedicated to understanding and codifying such works. In the middle of the 1970s, there were no magazines or media to discuss animation and special effects, so two monster fanzines,[116] were born, and their members began their activities. The DIY attitude was, "if you don't have any, you should just make one." In a sense, they need a community where they can share unique interests, research, and create knowledge that could be spread to other people. The fan group called "*Chū* (*Oozora*)" (宙(おおぞら) was created to discuss tokusatsu, and they started their anime and tokusatsu fanzine called PUFF with the collaboration of SF マガジン, the first successful magazine dedicated to science fiction; the first editor was Masami Fukushima and it published by Hayakawa Shobo.

> In the summer of 1974, a group of people who liked monster movies gathered at Tsuburaya Productions on their days off and formed a club called the "Monster Club" under the leadership of Hiroshi Takeuchi. The main members included Hiroshi Takeuchi (Toshio Sakai), Hisashi Yasui, Noriaki Ikeda, Masumi Kaneda, Yoshiharu Tokugi, Yuji Kaida, Shinsuke Nakajima, Masahiko Tomizawa, Masayuki Iwaida, Tomoo Haraguchi, and many others. I was also a member of the Monster Club. (Hikawa, 2000, p.55, my translation[117])

In Hikawa's account of the *Monster Club* (怪獣倶楽部, *Kaiju Kurabu*) time, the number of people interested in tokusatsu and animation was still relatively small. So, in a sense, these first

[116] "Fanzine. An amateur magazine produced by SF fans. The term soon became commonplace after being coined by Russ Chauvenet (in opposition to *prozine*) in 1940." (Stableford, 2004, p.109). The term fanzine is fairly popularized to describe fan-produced magazines. In Japanese, the term used is (同人誌, *dojinshi*), the meaning of (同人, *dojin*) is like-minded people, so in sum, a practice cultivated and funded by fans. For more details on the history of definitions regarding *dojinshi*, see Iizuka, Kunihiko (飯塚, 邦彦), 2017.

[117] "そして1974年夏、そのメンバーを中心に休日の円谷プロで怪獣映画の好きな人材が集結したことをきっかけに、竹内博氏の主宰で「怪獣倶楽部」というサークルを形成した。主なメンバーを列記すると、竹内博 (酒井敏夫)、安井尚志(ひさし)、池田憲章、金田益実、徳木吉春、開田裕治、中島紳介、富沢雅彦、岩井田雅行、原口智生、など各氏そうそうたる面々である。私も怪獣倶楽部の末席にいた."

fan groups and fanzines helped create a space for sharing knowledge, interests, and research about topics that did not exist yet. The early magazines were dedicated to television and aimed at children overall. “Even though each person had their specialty, the Monster Club had a good salon-like culture where people enjoyed what they enjoyed without distinction between anime and tokusatsu, and where people respectfully took in what they learned from each other’s activities.” (Hikawa, 2000, p.55-56, my translation[118]). The *Monster Club* members started recording and archiving materials, researching interviews in magazines and books about tokusatsu and monsters to develop their fanzine.

Besides leading the group, Hiroshi Takeuchi was an employee at Tsuburaya Productions in the sales and planning department. Takeuchi met Hisashi Yasui because he was a part-time worker for maintenance at Tsuburaya Productions. Masumi Kaneda, who would later be a writer, was still a high school student. Yasui also brought later his university classmate Hiromitsu Nishiwaki (西脇, 博光) to join the group after he became a tokusatsu music researcher. Noriaki Ikeda later became one of the pioneer writers of tokusatsu and animation criticism. Shinsuke Nakajima wrote for the fanzine PUFF[119], and Masahiko Tomizawa[120] was also involved in many writing and art projects. Ryūsuke Rikawa became a researcher and writer of both tokusatsu and animation, on multiple initiatives to develop research and conservation of these art forms. Tomoo Haraguchi had relatives working at Toho Studios, so he visited many tokusatsu film locations, sometimes receiving miniatures about to be discarded. Haraguchi mentions that the group could verify the information by accessing the original models.

> (Haraguchi): After *Ultra Seven*, I was given a small wooden miniature of the Hydranjer, which was about to be discarded, and I kept it with me for a long time. One day, I was looking at a steel Hydranjer from Kodansha's ‘Tanoshii Kindergarten,’ which was a large tinplate miniature, and I said to everyone: “The number of holes is different, what do you think? (laughs)”. (Akita, 2017, para.2, my translation[121])

[118] “個々人に得意ジャンルはあっても、アニメ・特撮の区別なく楽しむべきものは楽しみ、互いの活動には敬意を払って吸収すべきところは取り入れるといった、よきサロン的な文化が怪獣倶楽部にはあった.”
[119] In 2019, Nakajima published the book “PUFF と怪獣倶楽部の時代: 特撮ファンジン風雲録” (*PUFF to Kaijū Kurabu no jidai: Tokusatsu fanjin fūun-roku*), exploring this period in detail.
[120] See more in Gomi, Yōko (2011). Available at: http://www.style fm/as/05_column/gomi/gomi109.shtml (Accessed 2022.04.12).
[121] “『ウルトラセブン』が終わった後、廃棄されかけていたハイドランジャーの木製の小サイズミニチュアをいただいて、ずっと大切に持っていたんです。あるとき講談社の『たのしい幼稚園』に載っていたハイドランジャーのスチ

Hydranjer is a submarine that appears in *Ultraman Seven* (1967) and has small holes on the side, prompting a discussion about the difference between the commercialized miniatures and the original one. According to the interview and text by Akita, this story was featured in the third issue of the fanzine *Monster Club*. Since Takeuchi worked at Tsuburaya Pro, he gathered the approval of President Satoshi Tsuburaya (succeeding Hajima Tsuburaya), and the first issue of the *Monster Club* fanzine was published in 1975.

The title and cover were designed by Kako Yonetani (米谷, 佳晃), who had worked on monster designs for the television series *Mirror Man* (1971) and *Jumborg Ace* (1973). Later on, the *Monster Club* would help to write and organize pieces for *Monsters Pictorial Books* and in the publications of Tsuburaya Pro[122]. Takeuchi also helped save materials before they were discarded so the club could use them for their publications. "Haraguchi: Normally, it was 16 mm, but for the composition cuts, they used 35 mm for accuracy. That's why we still have photos of Geronimon monster and others in the same quality as with a still camera. Thanks to Mr. Takeuchi, we can still see these things today." (Akita, 2017, para. 4, my translation[123]). For the composition cuts of the film, they used 35mm film because they needed a high degree of accuracy, which helped conserve the images. At this time, Monster Club member Ryūsuke Rikawa was also participating in a fan club dedicated to *Space Battleship Yamato* (宇宙戦艦ヤマト, 1974) and helping in the fanzines publication. Hikawa helped publish the first issue dedicated to *Yamato* in the magazine OUT[124]. "Around the same time as the first issue of OUT, Asahi Sonorama, the commercial publisher of the Monster Club itself, published *Fantastic Collection*, which began the appeal of monster movies

ール、これはブリキ製の大サイズだったんですが、を見ていて、『穴の数が違うなあ、どうなんですかね?』とみなさんに話したことがあったんです(笑)」(原口)." Interview and article by Akita, Hideo. (秋田英夫). (2017). Available at: https://news mynavi.jp/article/20170627-kaijyu/2 (Accessed 2022.04.13)

[122] One example forTsuburaya Productions was "ファンタスティック TV コレクション No.2 空想特撮映像のすばらしき世界ウルトラマン" (*Fantastic TV Collection No. 2: The Wonderful World of Fantastic Special Effects Images Ultraman*). Tokyo: Asahi Sonorama, 1978. For additional information about the magazine articles that the *Monster Club* helped publish, see Akita, Hideo (2017), page 4. Available at https://news mynavi.jp/article/20170627-kaijyu/4 (Accessed 2022.04.13)

[123] "通常は 16mm だけど、合成カットでは精度を高めるため 35mm で撮っていたんですね。だからスチールカメラと同じクオリティでジェロニモンの写真などが残っている。ああいうのが今も見られるのは竹内さんのおかげなんですね」(原口)." Akita, Hideo, 2017, page 4. Available at https://news mynavi.jp/article/20170627-kaijyu/4 (Accessed 2022.04.13).

[124] For the complete discussion on this topic, see the section "*DIY fanzines to specialized publications"* on this thesis, where the fan clubs dedicated to *Yamato* animation are discussed. It is to be noted that the impact of tokusatsu and animation fan clubs happened almost simultaneously since they were fundamentally dedicated to science fiction. In this sense, they often specialized in tokusatsu or animation productions and then learned from the other media field. Fan discussions' collaboration degree is seen in fanzines and later specialized publications.

to the younger generation. This was another inevitable result of the times." (Hikawa, 2000, p.56, my translation[125]).

The Fantastic Collection first edition was dedicated to *Science Ninja Team Gatchaman* (科学忍者隊ガッチャマン, 1972), and the second edition was dedicated to the *Ultraman* series[126]. These were the first issues that used a multimedia approach alternating between animation and the tokusatsu series. The "mook" style[127] of publishing booming in the eighties, which mixes the style of a magazine and a book, often also publishing pictorial books, is an extension of the trend started by fan clubs collaborating with publishing companies. By engaging in DIY fanzines and fan clubs, the members were doing a media archeology excavation by following the clues that the materials provided and discussing and writing about the aesthetic choices that the artists made at that time.

"As a natural consequence, my Yamato fanzine activities were also heavily influenced by the *Monster Club*. The basic methodologies such as broadcast lists, staff interviews, and encyclopedic information organization that are now the standard were clearly the style of the Monster Club." (Hikawa, 2000, p.56, my translation[128]). The systematic approach in the fan clubs was led by the desire to create a community and a space to discuss such topics. As such, the *Monster Club* was a pioneer group, together with other mentioned groups, to establish a collaboration network that influenced fans and the publishing industry at large. Without the work done by these groups, many research materials could have been lost since they were not seen as valuable at the time. It was typical for miniature, set artworks, celluloid films, and drawings to be discarded after production.

The group members of the fan clubs would ask permission to retrieve the "trash" to save the materials they considered invaluable for their activities. In contemporary times, production materials of this kind are considered a rarity. They are usually sold at auction websites or given to

[125] "OUT 創刊とほぼ同時期に、怪獣倶楽部そのものを商業展開した朝日ソノラマで「ファンタスティック・コレクション」が発刊され、怪獣映画の青年層へのアピール がここから開始される."

[126] (Fantastic Collection) ファンタスティックコレクション. '空想特撮映像のすばらしき世界 ウルトラマン/ウルトラセブン/ウルトラ Q.' (*The Wonderful World of Fantastic Special Effects Films Ultraman/Ultra Seven/Ultra Q*.) Tsuburaya Productions; Asahi Sonorama, No.2, January 1978.

[127] See p.23, chapter "時代と出版" (*Era and publishing*, pp.16-34), in Japan Book Publishers Association (日本書籍出版協会).'日本雑誌協会日本書籍出版協会 50 年史' (*Japan Magazine Publishers Association 50-year history of the Japan Book Publishers Association*), 2007. Available at: https://www.jbpa.or.jp/nenshi/index html (Accessed 2022.05.02).

[128] "当然の結果として、私のヤマト同人誌活動も、怪獣倶楽部の大きな影響下にあった。いまでは定番となっている放映リストやスタッフ・インタビューなどの基礎的な方法論、事典的な情報整理学などは、明白に怪獣倶楽部流であった."

associations preserving such materials. Indeed, many artists' artworks history would have been lost or unheard of without fan activities.

Paying homage to the group activities, in 2017, the television series called *Monster Club: Imaginary Tokusatsu Youth Chronicle* (怪獣倶楽部～空想特撮青春記～)[129] was produced by Mainichi Broadcasting System and aired in different television stations. The drama consists of four episodes, and the story follows the actual events of making the Monster Club in the 1970s and the process of making their fanzine at the time. However, the characters and many story elements are purely fictional. The episodes also count on *Ultraman* series monsters guests, including Alien Metro (メトロン星人), Alien Guts (ガッツ星人), the space dinosaur Zetton (ゼットン), Alien Ghose (ゴース星人), and Alien Baltan (バルタン星人). The monster guests are actors wearing suits, following the characters, and comically impacting the series.

Zines and fanzines have been a place for the creation of alternative spaces, where participation and cooperation between members lead to community building. Belgium zine-maker Nina Nijsten gave a good definition: “Zines can function as a participatory alternative medium to give alternative views on the society that can’t be found in the mainstream media.(…).These connections can be useful starting-points for further co-operation and sharing of knowledge, support, and resources.” (Reitsamer; Zobl, 2014, p.329). That was the case with the first’s fanzines dedicated to *tokusatsu*, which helped pave the way to preserving and building media understanding and research when it was unavailable. These movements changed and shaped the history of Japanese media over the decades.

[129] For more information, see the official series website. Available at: https://www mbs.jp/kaijuclub/#intro (Accessed 2022.05.05).

2.5.1 Interview with Hikawa Ryūsuke, Monster Club member

The following text is a transcribed interview with the researcher and professor Hikawa Ryūsuke about his participation in the *Monster Club*, exploring the activities developed and the beginning of fan-led research and archiving practices. The interview was realized online on the 3rd of August 2022[130].

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Angela: Thank you very much for your time today. I am familiar with Hikawa's research, and I've read some of your books.

Hikawa: Thank you very much.

Angela: My first question is, in the summer of 1974, Tsuburaya Productions monster film lovers gathered in a club called the *Monster Club* that was formed around Hiroshi Takeuchi. There seemed to be various members, but Hikawa-san was also a member. I want to ask how you felt about being a member of the *Monster Club*, about your experiences and the activities you enjoyed. I have read about the *Monster Club*, since Hikawa-san participated in it, I would like to hear about your experience.

Hikawa: Yes, I think it was the first week of August '74. The meeting I mentioned was probably in the first week of August 1974, but even before that, Takeuchi-san (竹内, 博) had probably gathered some of the members. Tsuburaya Productions had two offices at the time, one in Soshigaya-Okura, where the production team was, and the other in the Mori Building in Roppongi, which was the second Mori Building, where the sales and music publishing offices were located. Each of these offices was visited by fans, and I started interacting with people who thought, "This is it!" So, the starting point of the *Monster Club* was a bit different for each person.

[130] The interview was conducted in Japanese language. The transcription from audio to the Japanese language was realized by Ryotaro Miyasaka (宮坂遼太郎). The translation to English inserted in this thesis was made by the author.

I went there in August not to visit Mr. Takeuchi but rather to join a coterie magazine called PUFF, which was advertised in *SF Magazine* and written about in Mr. Nakajima's book, and which was published by a group called "Chū (Oozora)" (宙(おおぞら) at the time. I joined this group first.

I was not informed that we were going to meet at Tsuburaya Productions, but I was asked to come to the meeting, and when I got there, I found that Mr. Hisashi Yasui (安井, 尚志) was at Ueno Station. The reason why we were meeting at Ueno Station was that some people were coming from Takasaki, but when I got there, I was surprised to see that it was Tsuburaya Productions. I heard vaguely that *Ultra Q* would be shown at the meeting, and since *Ultra Q* was in black and white, it had not been a rerun since 1974, so it had been a long time since I had seen it. That one episode, "Defeat Gomez!" (ゴメスを倒せ！), and the "The Challenge of 2020" (2020 年の挑戦) with the Kemurians in it.

At that time, Yuji Kaida (開田, 裕司) and Saki Hijiri (聖咲, 奇) probably came from Osaka as well. I thought that if I interviewed Mr. Kaida, I might be able to find some photos from that time. I lost some of mine, so I can't find them. There, Ken Kumagai (熊谷, 健), the producer of *Ultraman Leo*, came to me and asked me to talk to him about the various problems I was having with *Ultraman Leo* from the fall onward. So far, the PUFF project has been a *Monster fan club*, a fan activity, so I had been thinking of it more as an exchange or communication based on the premise of liking a specific type of monster. I also thought that I was someone who watched a lot of tokusatsu (special effects). Still, at that time, I went to Tsuburaya Productions to talk to various people and received a script for *Ultraman Leo*, which was being broadcast as a souvenir. I learned what it is like to be in a place where "Monster Shows" are made, how adults make blueprints or scripts and carefully create them one by one, and how producers make decisions about the direction of a project, even while worrying about the direction. It was another level of experience, and I was very excited and surprised.

At that time, there were no magazines on animation or special effects like there are now. Hence, there was only very bogus and inaccurate information for children about how programs were made. I could understand that "a suit was made, people entered the room, and filming was done" and so on, but I could not understand that there was a script, to begin with. If you think about it, "script" and "director" are indicated on the TV credits, so it should be easy to notice. I

believe that everyone spends their childhood with the understanding that Eiji Tsuburaya is the creator of these films. Well, that is not true.

So, this is where my view of things changed. I had this experience, and the level of people around me was very high, so what I just said about being surprised was child's thinking. For example, you must go through the primary sources and sort out the literature to do proper research. Then you have to go back to the source material. Many people from the surrounding area, especially from the Kansai region, were familiar with horror movies and foreign science fiction films. The conversations were full of background information that made me nervous. I felt half regret at how childishly I had participated in this kind of meeting, but on the other hand, my interest in such unknown things had grown. It was the summer holidays of my second year of high school, so when I started studying for the entrance examinations, but it was a groundbreaking meeting.

That's why I decided to go to the *Space Battleship Yamato* (宇宙戦艦ヤマト) site because experience came first. About two months after I went to Tsuburaya Productions, *Space Battleship Yamato* started, and it was three months after that that I went to the production site. Still, my interest was in the production process, and such things also grew from my visit to Tsuburaya Productions. And it so happened that as I was leaving, Mr. Takeuchi said, "I'll hold a meeting on the first Sunday of every month, so if anyone is interested, please come." So, I started attending gatherings like that in August, September, and October.

Angela: When you were a member of the *Monster Club*, Hikawa-san, did you also join the *Space Battleship Yamato* fan club in parallel?

Hikawa: Chronologically speaking, yes. First, there was the *Monster Club*, and then *Space Battleship Yamato* started on 6 October. At that time, I was watching *Saru no Gundam* (猿の軍団, 1974), and I was a traitor (laughs). Because I watched *Saru no Gundam* from Tsuburaya Productions and thought it was not so good, and then the next day at school, my SF friends, or those in the same physics club, watched *Yamato* and made a big fuss about it. I missed it, and I was so disappointed!

Well, I start watching *Yamato* from episode 2. In 1974, which is the 20th anniversary of Godzilla. Godzilla's birthday is on 3 November, which is Culture Day, and so we held the *2nd Japan Science Fiction Show* (第 2 回日本 SF ショー), a separate event from the SF Conventions,

which are conventions created by fans. Apart from that, there is a producer, Masahiro Noda (野田, 昌宏), who in SF Space Opera was one of the central figures. These people gathered together a group of young but professional people, and they were holding the 20th anniversary of Godzilla there, a *Godzilla coming of age ceremony* (ゴジラの成人式) and the *Komatsu Sakyo Award* (小松左京賞), so, I went there, and there was a film screening of the first episode of *Space Battleship Yamato*. I suddenly saw the one I had missed on the big screen. At that time, the fifth episode had already been broadcast, but I think that night was the broadcast day, so I missed the fifth.

Then I talked to my friends at the school I mentioned earlier, and I thought, well, there is a company called Tsuburaya Productions that makes *Ultraman*, so there must be a company that makes *Yamato* too. I barged in there and negotiated a visit. I wanted celluloid pictures. So that's how the arrangements were made to go to the Yamato site. From there, at the meetings of the *Monster Club*, we only talked about *Yamato*. So, I think I was looked down upon at the time (laughs). I'm sure I was looked at, and people thought: "What is this guy doing here?" I did a little bit of that double-timing. Not quite science fiction and not quite monsters; if it were science fiction, I'd give my soul to science fiction, one and all! When it was time for the monsters to appear in the meetings, we went with the monsters.

I remember that when *Rodan* (空の大怪獣ラドン) was broadcast on TV, I was talking about Yamato so much that it was frowned upon. I was a bit young and didn't know how to communicate with them, so I stuck my neck out. Noriaki Ikeda (池田憲章) probably wasn't around in August, but he came to the meeting in the middle. He was taking research notes, and when the film was broadcast on TV, he took notes on the script director and everything. I think the same thing happened with Yoshiharu Tokugi (徳木, 吉春). I was taught to do rudimentary things, such as taking notes and recording the back of the film rather than just staring at it.

In the meantime, around the turn of the year, people like Masanobu Komaki (小牧, 雅伸), who later became editor-in-chief of Animec (アニメック), who passed away recently, and other SF people from this area also came to work for Tsuburaya Productions. *There was a cultural exchange between science fiction, monsters, and animation in these places*. I was part of that cultural exchange.

In January 1975, I was in Ikebukuro watching *Godzilla* on New Year's Day, and I was kind of, well, frowned upon, taking pictures from the screen. That experience is quoted in the drama

about *Monster Club*. On my way home, Tomoo Haraguchi (原口 智生), whom I think was still in junior high school or a junior high school student, approached me and said, “We were taking photos, weren't we?” We stood around talking at Ikebukuro station, not knowing if we were about to enter a coffee shop at the time. It was frowned upon by the friends I was with, but I don't want to remember some of it because all the frowned-upon memories keep coming up. (laughs).

I didn’t know at the time that Mr. Haraguchi was such a fantastic person (laugh), so I told him there was a meeting like this and that he should come. Mr. Haraguchi would bring out Ultra Seven items from the Monster Warehouse, and he would also bring out props. We would have a little fun, and then we would all pick up the *Ultraman Leo* recovered rush film. At that time, people in rural areas only had access to children’s magazines (for tokusatsu) and could not record anything, so I think they were in an environment where they would watch TV and pass it by in a flash. I jumped into that kind of environment all at once. At the Godzilla coming-of-age ceremony I mentioned earlier, Sakyo Komatsu and Hiroshi Takeuchi were the hosts. I think both Honda Ishiro (本多猪四郎) and Fukuda Jun (福田 純), who were still alive at the time, were there, as well as producer Tanaka Yukou (田中 友幸), lighting designer Kishida Kuichiro (岸田九一郎), and, I can't remember for a moment, the staff of the first Godzilla. We had a round-table discussion, like a gathering of all the people who could appear in the film.

Anyway, in August (1974), when I went to the first Tsuburaya Productions meeting, I became aware of the need to preserve the materials properly, so I took a tape recorder and recorded them. I made a *dōjinshi* magazine (fanzine) of the recordings over the New Year, and when I handed it to Mr. Takeuchi, he was surprised and quite pleased that he appreciated it so much. I was also delighted that Takeuchi-san enjoyed it. I wondered how I had made it so quickly. He asked me to bring the remainder to give to other people. It was probably around 1975 that the *Monster Club* magazine was created. Without warning, Mr. Takeuchi suddenly brought it to me and said, “I’ve made something like this,” and I was surprised. It was different from PUFF. PUFF was a fan club, but the Monster Club was like a fan club with solid critiques and interviews with the staff. Takeuchi-san knew I could not write that deeply about monsters and tokusatsu, so he suggested I write about the *Space Battleship Yamato’s Monsters*. That was probably the first thing I wrote and probably the longest. I wrote it just as I saw it, and Noriaki Ikeda laughed at me right before him (laughs). At that time, I had already been in and out of Yamato studio, so I started to use proper illustrations and evidence and learned by watching and imitating.

When you think about it, (the Monster Club) was a kind of salon, and it was also like a school, wasn't it? Like practical education out of the blue. In the case of PUFF, it was a fan club, so people could write about whatever they liked, but the *Monster Club* was different; we were aware of what we now call *Tokusatsu culture*. Monster films were looked down upon, so people would say things like, "this is a vulgar thing" or "it's just for the sake of business." So, in contrast to literary films, tokusatsu was treated in a very ghetto way. For example, "The masters don't use visual effects!" (laughs). The fact that *Godzilla* and *Ultraman* are a hit overseas now was unthinkable then. Around the time the first issue of the Monster Club came out in 1975, it was the season of monster film extinction.

Ultraman Leo ended in March, and *Godzilla* disappeared into the sunset with *Mechagodzilla Strikes Back* and said goodbye, and *Kamen Rider* barely continued. However, everyone continued to respond to Mr. Takeuchi's research questions... I was fired around that time, so it wasn't easy. It sounds dry, but that's how the world works. As I mentioned earlier, until around the 1970s, when a film was finished, it was just one more, and then the next one was done; there was no such thing as a long-term series that lasted 20 or 30 years. We never dreamed of such a thing, and the more it was discarded, the newer customers came in. But, instead of that, it was more of an accumulation type. Mr. Takeuchi started the project with a solo effort, and then Mr. Hisashi Yasui (安井尚志), another major player who produces publications based on the accumulated material, joined the project. It was like two wheels on a cart.

After that, a magazine called *Terebi Kun* (テレビくん) was published, I think in 1976, because it had *Combatler V* on the cover. It was the third TV magazine for the generation a bit younger than TV Magazine (テレビマガジン) and TV Land (テレビランド), from kindergarten to first or second grade of primary school. It was the third TV magazine to start. At that time, Hisashi Yasui joined the editorial department of *Terebi Kun* as a contracted staff member and began to write articles and gather information on his own. I think it was in 1976 that a report on Ultraman appeared in a magazine called *GORO*, which was aimed at adults and featured nude photogravures, and it got a tremendous response.

There was a proper background, including Eiji Tsuburaya's accomplishments and everything. The significant difference from the past *Ultraman* specials was that the article was supervised by someone important to Japanese culture, such as Eiji Tsuburaya, and the monsters were appropriately treated instead of just TV personalities. When adults look at it, they see that it

is a work of art and that there is a designer or a sculptor behind it. The approach of saying: “This is why we are showing these pictures,” is entirely different. It doesn't just make you think that Ultraman is nostalgic. I think the article shows a little bit of the concept that although *Ultraman* was created by adults and shown by adults to children, it has a cultural and artistic aspect. I could not see the process because I only looked at the results. However, there is such a proper step-by-step process.

I felt the same thing when I went to the *Yamato* site. Until then, I knew that the animators were drawing pictures, but I didn't know who was giving the instructions based on what. I didn't know how it was organized, what the process was like, what checks were made, etc. However, I understood that process is essential to the final quality and emotion. I still often write about this in my manuscripts. Still, I am particularly frustrated with animation and tokusatsu because when a TV program ends or a movie theater lights up, everyone remembers only the characters and the story. So, that’s what all children’s magazines are made of. Either you talk about the characters, or you talk about the stories.

There is the mechanism and process by which the stories and characters are created, and then there are the people who did it, and then there are the people who share the work. For example, the *Ultra Monsters* were designed by an artist named Tohl Narita, so there is a logic as to why they are different. The analytical method or approach to that logic is (very) important. Nowadays, such things have become so commonplace that one might think that such things are taken for granted, but the fact is that there were people (like Mr. Takeuchi and Mr. Yasui) who made such procedures. I often warn students about this in my classes at the university, and I think there are so many things that everyone takes for granted, but this is the most dangerous part. This is where research begins with doubt. I always tell them that there are changes before and after things and that they should recognize them.

Angela: That ‘normal’ is normal from today’s point of view, but it was not normal for the people back then.

Hikawa: Yes. So, when people see *Ultraman* or *Ultra Seven*, they say things like, “Oh, that’s because of the scriptwriter, Mr. XX,” but until a specific point in time, few people even thought about that. That is why the achievements of the *Monster Club* and Mr. Takeuchi, and Mr.

Yasui are so significant. Probably not many people have created so many "normal" things. I mean, strictly speaking, they did not just create them. Researching (works) was also a kind of entertainment, if that's the right word, but research is one way to enjoy it. The most significant achievement is the creation of a cultural sphere that is very close to academia while also being business-based. However, it isn't easy to recognize that some people have done such things.

That was the story of *Ultraman*. After that, there was also the first issue of a magazine called *OUT* (Monthly OUT) about *Yamato*. This was also the June 77 issue; however, this was a subculture magazine. Well, it had all the elements required for an anime magazine since there were no anime magazines back then. It had the stories of the work, a directory of the characters, and the making-off of the film. There are storyboards from the scenario, original drawings, and a collection of famous lines. So, this is a scientific review, and there was a dictionary of terms, which I was in charge of. I think there is also an interview with Yoshinobu Nishizaki (西崎義展). Mr. Nishizaki is the person who created Yamato. He paid for Yamato and made it himself as an independent film, which was groundbreaking then. Instead of an existing Toei or other production company, a single producer collected the money and bought the broadcasting rights.

There was also Noboru Ishiguro, who was the on-site director right after they finished 26 TV productions, and I went over to him and asked him about various things. When I looked at his desk, I saw a *Yamato* storyboard. I asked him what it was, and he told me that it was a re-edited version of the TV series and that it was a new part of the series to be sold in America. The studio had already disbanded, but I had caught up on information about such things early on by doing direct interviews like that. Around March/April 1977, Mr. Katsuki Hamamatsu (浜松克樹), who was editing OUT at the time, visited Mr. Nishizaki and told him that he had just sold a copy to the US and was thinking of having Japanese fans see it too! So, we did this extensive feature, and OUT magazine sold very well. And based on the response, the film project gradually became bigger and bigger. The producer Nishizaki held a meeting with all the leaders of fan clubs in the country, and we agreed to cooperate in the project to win a prize.

Especially in the case of *Ultraman*, we were lucky because Mr. Yasui was a member of *Terebi Kun*, so the audience for advanced reading became younger. So, while keeping this advanced reading style in the background, we also mixed it with the fact that the Ultra Brothers are popular among children and did various special features in *Terebi Kun*. As we did this, people, including younger elementary school students, gradually accepted the geeky side of things. Those

who grew up reading such books eventually became junior high school and high school students. This was very good. If we had focused only on the older generation, we would have seen a drop-off, but there were mechanisms to prevent that from happening. Looking back on it now, I think it was quite comprehensive and all-encompassing in building a *cultural foundation*.

Also, as I said before, everyone first looked at the *Monster Club* with a concerned eye when talking about anime, but the atmosphere changed in the middle of the year. I think it was around 1976 when *Combatler V* was released. In 1976, an anime called *UFO Robot Grendizer* had a 'sister character' called Maria, which was obviously an afterthought and drew attention to beautiful girls in anime. The tide changed quite a bit when idol-like characters appeared in robot anime. It was a time when the story of anime was also included, or rather the degree of freedom was increased. When Tomizawa-san and Nakajima-san started working on the PUFF magazine, they began to have anime, and I think the *anime ratio* increased.

2.6 Introducing Tokusatsu beyond Japan

Tokusatsu has expanded beyond Japan with television shows exported to other countries, inspiring homages, and original contributions to the genre. With the internet, online forums, and worldwide viewers, it would be easy to think this is a recent phenomenon. Indeed, the technology allowed for faster transmission, but there was an interest in exporting and entering markets from the beginning. The reasons vary between economic interests, wider market opportunities, and aesthetic innovation and relevance.

Since *Godzilla*, there has been an interest in monster movies and later in television series featuring suit actors, miniature models, and special effects of a wide range. One example is the series *Super Giants* (1957-1959), directed by Teruo Ishii and produced and distributed by Shintoho Company (dissidents from the Toho branch). It was created in the context of the development of nuclear weapons, and the series had a message of anti-war and a desire for peace. The series shares some tropes of *Adventures of Superman* (1952-1958), based on the *Superman* comics created by Jerry Siegel and Joe Schuster. *Super Giants* series had its first six movies condensed into three films in Italy and France. In the 1960s, Walter Manley's company bought the rights for the series and altered the name to *Starman*.

Even more so, many countries produced versions of tokusatsu monster movies, like *Gorgo* (1961), directed by Eugène Lourié, an international co-production collaboration between the UK, USA, and Ireland. The movie was an homage to Godzilla and was made utilizing suitmation, miniatures, and special effects. Following this trend, the film *Reptilicus* (1961), a Danish-American co-production about a prehistoric reptile, was released in Denmark and USA. In Asia, *Daekoesu Yonggari* (*Yongary, Monster from the Deep*, 1967), a South Korean and Japanese co-production between Keukdong Entertainment Company and Toei, was directed by Kim Ki-Duk, with Kenichi Nakagawa as the special effects director. The storyline is of a giant monster coming to Seoul after being awakened by an earthquake triggered by a nuclear bomb test.

Another example in the 60s was *National Kid* (1960-1961), the tokusatsu television series produced and broadcast by Toei was sponsored by Panasonic to promote the brand. Although it did not succeed in Japan, it became popular in Brazil. In Brazil, the series premiered in 1964 and remained on the air until early 1970 through local television stations Rede Bandeirantes and TV

Record. The character became and has remained so iconic in the country that the Samba school Unidos da Tijuca, in its thematic journey through space in the 2009 parade, brought the fantasy of *National Kid* to Rio de Janeiro's carnival, among other science fiction cult figures.[131]

The series *Ambassador Magma,* from 1966, was aired in Brazil in 1973 by television station Rede Tupi and rebroadcasted by TV Rede Record in the late 1970s. In the 1960s, the *Ultraman* series aired on Rede Tupi television and rebroadcasted until the 1980s on Rede Bandeirantes, TV Manchete, and TV Record. Later, P. Productions would produce a new series starring a giant hero that would also become popular in Brazil: *Spectreman*. The series, created by Tomio Sagisu, was aired between 1971 and 1972 on TV Asahi. In Brazil, it was aired in the 1970s by TV Record and rebroadcast in 1980 by TVS (currently SBT). Since the series dealt with ecological issues and its fight sequences, the monsters came out of the industrial waste, which resonated with the Brazilian audience. It also aired on Turner Broadcasting System in the USA between 1978 and 1980.

In 1982, Claudio Seto decided to create two magazines to create Brazilian manga, creating the magazines *Super-Pinóquio* (*Super-Pinocchio*) and *Robô Gigante* (*Giant Robot*). Giant Robot featured two adventures; the first, *Giant Robot - The Mighty Guardian*, with a script by Cláudio Seto (signing with the pseudonym Selene Tobias) and art by Watson Portela, was an adventure inspired by manga, which, at the time, were still virtually unknown to the reading public. The Giant Robot was an automaton commanded by three people to face significant threats. The second adventure of the title, *Ultraboy*, by Franco de Rosa (art and script), brought an adventure with a character inspired by the *Ultraman* and *Ultraseven* series. The magazines had only one edition, but in 2018, Franco de Rosa teamed up with Maurilio DNA, and they revived the comic *Ultraboy* by mixing colors and monochrome. The final product was released at *CCXP- Comicon Experience* in Brazil, the largest entertainment convention in Latin America.

The Super Inframan (中國超人) is a Hong Kong tokusatsu film produced by Shaw Brothers Studio in 1975. The movie features transformation poses inspired by Kamen Rider, suit actors, monsters, and robot fights, including Chinese martial arts. Inspired by Japanese tokusatsu that was available on regular television broadcasting, Brazilian fans created 2000 the original web series *Insector Sun*, by KRI Produções Entretenimento, based on the Brazilian superhero comics. In

[131] Photo and news about National Kid in Brazil's carnival of 2009, see: https://g1.globo.com/Carnaval2009/0,,MUL952532-16634,00-NACIONAL+KID+VAI+INVADIR+O+ESPACO+SIDERAL+DA+UNIDOS+DA+TIJUCA.html (Accessed 2022.02.12)

France, *Jushi Sentai France Five* (銃士戦隊フランスファイブ), an original tokusatsu mini-series, was directed by Alex Pilot in 2000. Each member of the group was themed after an aspect of French Culture. They also had mecha vehicles and robots to assist the fight members.

In Thailand, *Sport Ranger,* a television tokusatsu series similar to the style of *Super Sentai,* and the American *Power Rangers* franchise aired on Thai Channel 3 in 2006. The series theme is based on sports, so each character has a sports specialty. In the Philippines, the tokusatsu series *Zaido: Pulis Pangkalawakan* (2007-2008) was broadcasted by GMA Network. The series is a spin-off of the Japanese Metal Hero series *Space Sheriff Shaider* (宇宙刑事シャイダー, 1984-1985), which is the last of the broader *Space Sheriff Series*.

Japan and United States have a long history of mutual influence on visual media, and it can be said that they have fundamentally influenced each other aesthetic models. Beyond Godzilla movie adaptations and their take on the franchise, different tokusatsu styles invaded the United States. In 1992, TOEI and BANDAI produced the Super Sentai series *Dinosaur Squadron Beast Ranger* (恐竜戦隊ジュウレンジャー). Following the Super Sentai tradition of the five rangers, the Zyuranger's costumes and colors were used for the American adaptation of *Mighty Morphin Power Rangers* (1993-1996). The series premiered in 1993 on the Fox Kids programming block, becoming a pop culture phenomenon along with an extensive line of toys, action figures, and other merchandise products. The success made space for the *Gridman the Hyper Agent* (電光超人グリッドマン) to be adapted to the American audience as *Superhuman Samurai Syber-Squad* (1994-1995) produced by Tsuburaya and DiC Entertainment.

Highly successful, *Transformers,* a media franchise developed by Japanese toy company Takara Tomy and American company Hasbro. It grew into a worldwide franchise of movies, comics, and animations, all based on the transforming robot toys that started around 1984-1985, expanding until contemporary times. The success of Japanese tokusatsu and Robot Anime gave space for the Hollywood movies such as *Real Steel* (2011), directed by Shaw Levy, and *Pacific Rim* (2013), led by the Mexican director Guillermo Del Toro. "After Del Toro migrated to Hollywood, he created Pacific Rim, which, as noted, reflected these Kaiju and Japanese manga/anime giant robot aesthetics as strong influences. Above and below: similarities in chest armament in Tezuka's *Ambassador Magma* (top image) and *Pacific Rim.*" (Davis, p.19, 2016). There are also clear influences from *Ghost in the Shell* (1995) to the movie *Matrix* (1999), directed by the brothers Wachowskis, especially in the representation of green numbers and the overall

technological depiction[132]. In sum, the 90s and 2000s generated not only the anime boom but also a demand for tokusatsu shows and their adaptations to foreign markets in different countries, inspiring the production of original shows.

"These Japanese programs – especially the phenomena of *Mighty Morphin Power Rangers*, *Pokémon*, and *Yu-Gi-Oh!* – gradually transformed the Saturday Morning landscape in less than a decade." (O'Melia, 2020, p.2). Author Gina O'Melia says that while Susan Napier wrote in 2001 that people would watch Japanese shows because they were outside of the mainstream and that the adult public would appreciate the novelty, in her view, it was different for American children. "Japanese content had been consistently the highest rated programming on Saturday Morning for years at that point, and the schedule was becoming dominated by it." (O'Melia, 2020, p.6). It can be said that the shows that were so prominent in the 1990s in the United States resonated with a broad audience of varied ages. The popular shows in the USA would be translated into Portuguese and Spanish, also being broadcasted in many countries of Latin America. Of course, each country dealt directly with the Japanese industry about releasing shows in their countries, besides the partnerships with the USA.

For example, in Brazil, many television stations had Japanese series before introducing the *Mighty Morphin Power Rangers*. "A flurry of TV series began in the late 1980s and the following years. After *Jiraya* came *Flashman*, *Jiban*, *Lion Man*, *Winspector*, *Space Cop*, *Cyber Cops*, and soon every network had its batch of tokusatsu." (Lobato, 2013, p.21, my translation[133]). Series like *Changeman* (電撃戦隊チェンジマン, 1985), the Metal Hero series *Space Wolf Juspion* (巨獣特捜ジャスピオン, 1985-1986), and *World Ninja War Jiraiya* (世界忍者戦ジライヤ, 1988-1989), enjoyed a successful rate in Brazilian television. *Space Wolf Juspion* was called *Jaspion* in Brazil and was broadcasted on TV Manchete, giving 15% of the daily audience to the television station. When Power Rangers came to Brazil, it was broadcasted in Rede Globo, in the time slot children most likely watched. The show became a huge success and popularized tokusatsu to a broader audience in the country. Because older viewers watched tokusatsu shows broadcasted in Brazil at the end of the 80s and 1990s, fans started to create independent websites and groups to share Japanese shows. "Using the Internet resources, they began to deepen their research, build

[132] For a detailed account of the mutual influence between Japanese shows and US productions, see Davis, Northrop (2016).
[133] "No final da década de 1980 e nos anos seguintes, começou uma enxurrada de séries na TV. Depois de *Jiraya*, vieram *Flashman*, *Jiban*, *Lion Man*, *Winspector*, *Space Cop*, *Cyber Cops*, e em pouco tempo cada emissora tinha seu lote de tokusatsu."

specialized websites and blogs, share rare and classic episodes, and collect relevant (and irrelevant) information, so that children of the past could watch episodes that were rare or never aired on TV." (Lobato, 2013, p.23, my translation[134]). That created a wave of interest in the genre in Brazil, not only among the Japanese Immigration Community but with the vast population in the country.

Space Wolf Juspion, called *Jaspion* in Brazil, became such a beloved character that a complete Brazilian version of the hero[135] started being produced in 2018 by Sato Company[136]. It is a film distribution company near São Paulo founded in 1985 to provide access for Brazilian viewers to watch Japanese programs. Although no concrete release day was stipulated, the project is about Brazilian *Jaspion* fighting in São Paulo. Additionally, the independent 3D CGI artist Rafael Segnini produced his version of the character, calling it "Jaspion 3D" and uploading the productions to his YouTube channel[137]. This production was not missed by Toshio Miike, that commented about the production in an interview:

> Speaking about *Juspion*, there was a CG work created by a Brazilian artist that was uploaded on the Internet. How did you feel when you saw it?
> Miike: It was a surprise, wasn't it (laughs). The images are a massive upgrade while respecting the original image. In the original, the way *Juspion* gets into the mothership form of the Daireon is not logical, but it was presented as if it were in zero-gravity space. I was impressed. (Fukuoka Tokusatsu Zadankai, 2021, p.6, my translation[138])

It is unavoidable to notice that the DIY process for making Tokusatsu has changed the worldwide media landscape. From fan groups to making homages or original works produced outside Japan, the DIY aspect was adopted in other countries. Besides autonomous creators and

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[134] "Usando os recursos da internet, eles começaram a aprofundar suas pesquisas, construir sites e blogs especializados, compartilhar episódios raros e clássicos, coletar informações relevantes (e irrelevantes), de forma que crianças do passado pudessem assistir a episódios raros ou que nunca chegaram a ser transmitidos na TV."

[135] This project in Japanese News: https://www nikkeyshimbun.jp/2018/180519-71colonia html
Brazilian news: https://www.sobrevivaemsaopaulo.com.br/2020/06/filme-brasileiro-do-jaspion-deve-se-passar-em-sao-paulo/ (Accessed: 2022.04.06.)

[136] Official page of the Sato Company, which distributes Japanese programs in Brazil. See https://sato.tv.br (Accessed: 2022.04.06.)

[137] Rafael Segnini YouTube playlist with the versions made of "Jaspion 3D".
See https://www.youtube.com/playlist?list=PL768196B6A28E6C6B (Accessed: 2022.04.06.)

[138] "「ジャスピオン』と言えば、ブラジルの方が同人で CG 作品を制作されたものがネット上にアップロードされていますね。あれは制作に携わられたご本人がご覧になられて、どのように感じられましたか。三池: あれはビックリしますよね(笑)。オリジナルのイメージを尊重しつつ、物凄くグレードアップした映像になっていますから。ジャスピオンが母艦形態のダイレオンに乗り込むときとかの見せ方もオリジナルでは理屈ではなくスーッと中に入っていますが、それを無重力空間の ように表現してくれて。実に感動しました."

fans, it is clear that the image of *Cool Japan* and the soft power these shows hold can be linked with broader movements of capitalism, globalization, and interconnectedness that the twenty-first century came to signify. Anne Allison (2006) argues that Japan has come to symbolize an imaginary space where goods move in the global community. “Rather, *Japan* operates more as a signifier for a particular brand and blend of fantasy-ware: goods that inspire an imaginary space at once foreign and familiar and a subjectivity of continual flux and global mobility, forever moving into and out of new planes/powers/terrains/relations.” (Allison, 2006, p.277).

The overwhelming imaginary space that Japan can signify in the global community has many aspects worth analyzing, be it economic, social, political, and so on. They are highly connected and enmeshed as an organic process. In the same book, Allison argues: “Taking account of the centrality of *mecha* in Japanese play goods throughout the postwar period to the present, I call this aesthetic techno-animism.” (Allison, 2006, p.13). I would argue that the centrality of technology in Japanese media is the space where the materiality of objects in human surroundings is garnered by artists and shaped to reveal different aspects of aesthetic, social, and political reflections. I propose to look towards the machine, specifically at how techniques and aesthetics are enmeshed, to look at the artist's perspectives and how they are active agents in making choices of materials, forms, and narratives that indeed shape society into reflection, denial, acceptance, and an array of reactions. In the next section, this research explores the technosocial connections shared by tokusatsu and animation.

Chapter 3: Super Robot, Effect Animation, and Fanzines

3.0. Towards the Machine: conflict and integration in image composition

> Critics and audiences view art as finished products to be appreciated and interpreted; an artist sees a work by another artist through the eyes of a fellow art-maker, as *a made thing*, and tries to discern how it was made, how its materials were worked. For an artist, experiencing other people's art is part of the endless quest to deepen her own knowledge of art-making – her own *techne*. (Staten, 2019, p.3)

The concept of Art in the Greek world was closely aligned with the skill and the know-how passed down to generations. It concentrated on the nature of artmaking and the social constitution of knowledge sedimented throughout the generations. Staten (2019), in a reflection about recovering or investigating art through *techne*, sought to reacquire its meaning as developed firstly by Plato and then fully matured in Aristotle. In sum, his approach proposes a shift from looking at art as a finished product to interpreting more on *how* and *with what* art is made. In this sense, *techne,* in the first instance, is a form of social-historical knowledge, a practical knowledge that has been accumulated within and across cultures over generations, that is then passed to individuals, where the know-how that is inherited is passed along to other individual's mind and bodies. "Such practices are virtual machines or programs in which is encoded the know-how human societies discover over time." (Staten, 2019, p.10). The know-how can be defined as the myriads of trial and error, discoveries that come together and are passed over generations.

The word techne (*technē*) has an etymological connection with *tektōn* (carpenter) since techne's feature would be of epistemically well-founded practice. In short, techne would embody positive values in its capacity to increase the sphere of control and the episteme of human knowledge. However, the semantic conjuncture, aside from having the meaning of practice, art, technique, and expertise, can be translated into other contexts as artifice and trick. This relation would correspond to the distinction between genuine techne and mere technēmata (techniques), the latter being part of a craftsman's repertoire, which did not constitute a craft or expertise per se. This distinction is also connected to the Prometheus myth. While the technēmata can be used for harmful purposes, a genuine techne would be directed towards a suitable purpose.

In Aristotle, the concept of techne is brought forth by the intrinsic relationship between form and matter, being natural or artifacts. “Both natural and artefactual forms, then, start out as ‘intrinsic seeds of natural potential’ in Aristotle. This natural potential is intrinsic to matter itself, although it is itself formless – or perhaps because it is formless – feels inexorably drawn towards form (…). ” (Staten, 2019, p.66). The desire to form consists of the combination of thought and poiesis, which means the knowledge embedded in the artisan mind that moves the tools, which shapes the materials, a sort of physical motion that embodies the disembodied power of techne.

In this way, the way that Staten architects techne to the modern thought is that techne would be a form of forms, “the evolving logic or *logos* that holds a practice disperse over time, space, and individual practitioners whose individual appropriations of it might differ in ways large and small, and which enables them to track given lines of forces.” (Staten, 2019, p.189). A critical aspect of his theoretical framework is that the creation of new forms would be attributed mainly to the techne ensemble’s dynamics on individuals and larger communities. The human, the tools, and the artmaking process are deeply interchangeable factors; to look at this process, it is necessary to look at the machine.

The machine concept is operated following Deleuze’s understanding of *abstract machine*, which is close to how Staten’s *virtual machine* is applied. Hence, Deleuze’s abstract machine is not a mechanical apparatus; it is what runs through differentiated levels of material, cognitive, affective, poetic, and social elements. The virtual machine of Staten is the code of the know-how that crosses generations. That is because apparatuses, humans, and social matter are all interconnected. So, the machine is what allows a particular dynamic of innovation that encompasses all of these levels. “For the Greeks, artifice was ‘that which is produced by man and not spontaneously engendered by nature. Art, which the Greeks identified with ποίησις (poiesis) ‘creation’ and technology, from the Greek τέχνη (techne) ‘craft’ are the two great sources of artifice.” (Chabot, 2003, p.16). The artificial aspects of poiesis and techne tend to pose a duality between natural, living things, and artificial objects.

For Gilbert Simondon, increasing autonomy or indetermination does not mean total assimilation between technical and living beings. However, the proposal of the information machine's autonomy – a characteristic that was up until that point only attributed to living beings – ended up leading mainly to a reprint of the Cartesian paradigm in biology with the emergence of the Cybernetics field. In this sense, Simondon’s system of thought confronts the Cybernetic

proposal of the union of technical mechanisms with natural beings because a technical being would not be a natural object but rather a tendency to the concrete being. This movement would derive from the abstract technical object, which becomes closer to the existence of natural objects (spontaneously produced) as it concretizes its existence.

> He never asserts that the mode of existence of technologies is entirely commensurate with that of living things. Concretization is a tendency within the development of technical objects. The object always retains the vestiges of its abstract and artificial origins. Its existence presupposes an objective conceived of and executed by human beings. (Chabot, 2003, p.17)

However, again, the assimilation between them would never be complete. The distinction between abstract and concrete technical objects would be due to the difference between functional convergence and divergence. The technical object would materialize itself as it was progressively released from its abstract residue. With this in mind, Simondon's proposal demonstrates that the technical object could not be reduced to a scientific principle. As such, by not being absolutely concrete, insofar as it only tends to an embodiment, Simondon's position involves an approximation between the technical and the organic. In this sense, the origin of technical objects would be made by leaps, and their evolutionary invention would depend on the thought and self-poetic character of the living. Ultimately, technical developments would have human intervention (not the only one), and there would be no full concretization because evolution would be tied to the human being. In a way, Simondon was an anti-technocrat and tried to construct a theoretical model that considers the technical object within the process of its creation in a *milieu*, that is, not outside or inside.

The conflict and integration of elements in image composition are organized considering many factors. Digital Animation and Tokusatsu deal with media composition, with their ability to utilize images from different sources, such as live-action, painting, motion capture, 3D CGI, and other digital techniques for drawing and composition. The relationship between different elements in the moving image composition deals with combination, the balance of conflicting textures, and image layers. However, how to solve the composition was already present in the analogic era, with a combination of Optical printers, Animation stands, Drawing techniques directly on film, careful planning of the animated effects, and so on. Digital practices have brought an awareness of image

composition to the forefront of aesthetic discussions in the twenty-first century; however, it is not a "new" practice.

The optical printer is a mechanism that allows multiple images to be composited on a single strip of film by covering an area with a mask to protect it from exposure to light. It is also designed to make a copy of the film since the optical printer contains a projector at one end and a camera at the other. In a simplified manner, by running the film through the projector and re-filming with the camera at another end, you create a duplicate ready to use for adding colors, animated effects, and composition with different live-action footage to combine a scene. The camera and projector lenses[139] allow for zoom in and out, slow-motion and speed-up movement, image filter, blur, and the already mentioned masks to create the animated scenes. With digital software for image composition, it is easy to redo a scene if any mistakes happen. However, in the analog era, once the film had been exposed to light, the image would be burned by the chemical process on the film, and it would not be possible to erase it. For example, with the optical printer: "If you wanted to create a slow-motion effect, for example, you could shoot two camera frames for every one projector frame. Any more than two frames create a staggered effect between the frames and an effect that can also have applications in creating time and image distortions." (Mamer, 2013, p. 395).

To create masks that would lead to the animated effect, they used the animation stand[140], which was mainly used for making 2D animation. In the animation stand, the camera is mounted on top, with a lamp on the opposite side of the camera lens so that the film applied to the camera can be projected onto a drawing board (a board on which lines and pictures can be drawn). The process of outlining the projected image starts and different masks are made. For example, a fixed mask was used for compositing where the camera did not move to replace unmovable parts, while a moving mask was used for moving objects such as people. Once the mask is completed, it must also be reshot.

> As a result, the photographed image is projected, and the necessary parts such as the part of Godzilla's mouth that spits fire, the position of the building that explodes when exposed to light rays, and the outline of the people that were to be combined, etc.; are displayed and

[139] For understanding how the DIY process with optical printer contributed more widely to Avant-Garde Cinema, see Powers, John. 2018.
[140] For more details on the mechanical and technical procedures utilizing animation stand, see Brian G.D. Salt, 1977.

> traced (projected) on paper. In Toho's Optical Drawing Department, this tracing process was called "Ataritori," and the traced paper was called "Atari." Ataritori was usually done with a pencil, and the ink was used for the pen while observing the back-and-forth movement. The mask is then completed by the assistants, who fill in the outlines. (Iizuka; Matsumoto, 2016, p.32, my translation[141])

This process meant that it sometimes took weeks of work by several people making the animation, filming, and composition departments to get the approval for the effects applied. Using masks to protect an area from exposure and composition schemes made in the animation stand made many other effects possible since they could overlap images and add other procedures. However, it is interesting to observe that the animation stand for cel animation already had an optical composition feature because of the procedures of combined frame materials, including cel images and painted backgrounds, etc., along with sliding the layers to create movement. In fact, in tokusatsu productions, both machines (Optical Printer and Animation Stand variations) were used interchangeably to create light effects, unite separated images into one frame, and so on.

> These lineages are technoaesthetic lineages based on tentative experimental solutions derived from working with the abstract machine implicit in the problem of compositing, which became concretized in history of cel animation in a series of variations on the base apparatus used to work with cel layers: the animation stand. (Lamarre, 2018, p.7)

Lamarre proposes to think of animation in terms of determination. This position means working with the nuances of the animation process without transforming them into closed rules, that is, working with the heterogenesis of the processes. "Consciously or not, when we stress the importance of artwork in animation, we tend to introduce a strict divide between technique and technology, which rides on a questionable division between poiesis and techne." (Lamarre, 2009, p.13). The non-division between technique and poetics underscores the heterogeneity that the abstract machine proposes. To think in terms of determination rather than in technological

[141] "これにより、撮影済みの画が投射され、必要な部分、例えば口火を吐くゴジラの口の部分、光線が当たって爆発する建物の位置、合成される人物の輪郭など、作画に必要な 部分を紙にトレース(映し取る)していく。東宝の光学作画部では、このトレースすることアタリ取りといい、トレースされた紙をアタリと呼んだ。アタリ取りは通常、鉛筆で行われ、前後の動きを見ながら、インクによるペン入れがなされる。そして助手たちが輪郭の中を塗りつぶしてマスクが完成する."

determinism and in terms of a machine rather than structure. The animation is organized into several planes or layers of images that occur in a succession of images, often applying low or high-quality technologies in the same image. For this reason, the layered composition becomes an important factor since it includes the humans who work to build their features and produce through it; it also encompasses other virtual and real machines.

Regarding the animation stand as an apparatus and its overall effect on the animation field, there is a significant lineage of renowned authors such as Alan Cholodenko[142], Thomas Lamarre, and Paul Ward. More recently, the reflection in the open-source book *Animating Unpredictable Effects: Nonlinearity in Hollywood's R&D Complex*[143] by Jordan Gowanlock (2021) rethinks the historical and theoretical relationship between animation and engineering by studying software tools used to animate in Hollywood blockbusters animation and film. In the contemporary moving image field, nonlinear animation gives complexity to moving images and a sense of human touch in a highly digitalized environment. This applies to the animation industry that utilizes nonlinear animation in 3D CGI, and to VFX studios that build tools to simulate animated images inside live-action footage or give the impression of simulated immersion. "This epistemic horizon, this episteme, applies not just to our supposedly "post-cinematic" digital lives, but also to the way society sees materiality and material phenomena." (Gowanlock, 2021, p.5).

Nonlinear animation also involves configuring software and programming algorithmic simulations to create movement. This technology is used in financial mathematics, management science, and animation tools used in Hollywood blockbusters and the video game industry. Gowanlock argues that: "It has become such an effective engine for technology development that Hollywood software is now used in a variety of other fields, from architecture to geophysics.[144]" (2021, p.52). Animation has been historically and theoretically approached as a nonrealistic style of composition and movement. And as such, the medium had a complicated relation to realism and its theoretical place.

[142] His works include *The Illusion of Life: Essays on Animation* (1991), the *Illusion of Life II: More Essays on Animation* (2007), and numerous publications in journals such as *Animation: An Interdisciplinary Journal*, among others.

[143] The book has an open access, so it is public available at: https://link.springer.com/book/10.1007/978-3-030-74227-0 . In general, the book rethinks the historical and theoretical relationship between animation, and engineering by studying software tools used to animate, it dives into the economic and institutional machine that is constantly producing the cycle of media technology emergence, dominance, and residue. And finally, develops a theoretical framework for understanding how knowledge is created through making media apparatuses and artifices.

[144] For more about the relationships between USA government funding on VFX and animation technology, Cold War practices, and the current evaluation of this industry chart, see Chapter 3: *Hollywood R&D Complex*, pp.51-84, 2021.

Four years before the impactful publication of *The Language of New Media* (2001) by Lev Manovich, the author published an article called '*Reality' effect in computer animation* (1997) presenting the state of affairs at the turn of the twenty-first century: "As film scholars were producing increasingly detailed studies of cinematic realism, film itself was already being undermined by three-dimensional computer animation." (Manovich, 1997, p.13). Manovich analyzes the discourse surrounding realism (1997, p.10) in Bazin – the cinematic image as an impression of visual reality –, Comolli's – history of computer graphics as a historical substitution of stylistic conventions and techniques –, and Bordwell and Staiger – the relationship between realism conventions and the history of the computer graphics industry. Each approach adds a perception regarding the simulation of codes formed in classical cinematography and the simulation of the real environment. "However, under current Hollywood standards, a movie is considered a live-action film unless, the main character is animated, or seventeen-five percent of its components consist of animation." (Ishioka, 2019, p.151, my translation[145]). However, even this definition is being stretched nowadays, with the premiere of the remake *Lion King* (2019) made by Disney Film Productions being promoted as live-action. The *Lion King* uses CG animation, photoreal imagery, and virtual reality components to produce a live-action feeling.

On the other hand, the Japanese relationship between animation and film, or even special effects, had a distinct development, even though it was also influenced by the scenario in the USA. In this sense, I would argue that tokusatsu effects approached mimicking aspects of reality without being pressured to hide its artifice. The materiality of their craft was passed on in a system with senior artists and new people learning and developing innovations on-site. The new artists hired would experience the artwork deepening their own techne or art. There was also some space for innovative approaches as no materials and procedures were established initially. The digital composition was inserted in the 1990s but used carefully in some parts of the frame together with established techniques.

Watanabe Hideo is an anime director member of the Archive Center for Anime Studies at Niigata University. In his article *Directing at Anime/Animation Studios: Techniques and Methods* (2020), he discusses some common elements of directing a live-action film and animation. He interviewed Toei Animation Katsumata Tomoharu and said: "There is no difference between a

[145] "けれども現在のハリウッド映画基準では、主人公がアニメーションで描かれ、かつ構成要素の七五パーセントがアニメーションから成る映画でないがぎりは「実写映画」とみなされる."

live-action film director and an animation film director. If anything, it would be that an animation film director must be able to read, understand, and work with exposure sheets. But that would be it." (Watanabe, 2020, p.5). Watanabe also remarks that animators benefit from watching live-action since they have to construct similar images in a three-dimensional space of paper and think of angles and other elements.

> This can be seen in the *Ghost in the Shell* (1995) director Oshii Mamoru's (1951-) helming of *Avalon* (2001), or the *Neon Genesis Evangelion* (1995-) director Anno Hideaki (1960-) taking the reins for *Shin Godzilla* (2016). These directors were able to make the crossover because the methods for directing animation and live-action films are fundamentally the same. (Watanabe, 2020, p.6)

In a sense, the procedures are similar because both animation and live-action film directors have to imagine how to compose each frame's movement. The storyboard drawings help create a base for the creative endeavor. The similarities of technical procedures allow artists to transit between media, especially in the case of animation and tokusatsu culture, that has been long intertwined. In doing so, they stretch the limits of what can be expressed in each genre and build collaboration networks that ultimately allow for a creative energy flow. By looking at the artists technical practice and sociopolitical contexts, it becomes clear that to understand these movements, it's necessary to look at the step-by-step process of aesthetic procedures. Otherwise, the risk is missing the most ethereal connections forged in art practice and the social collaboration of artists. In this sense, to open the apparatus and the abstract matter of a machine, in Deleuze's terminology, it's necessary to look at both ends in a continuum process of becoming.

3.1. Super Robot – designing robot anime boom across media

Why did Robot culture and representation flourish so much in Japan? The mainstream of *Robot Anime* became the trunk of a tree fed by the interaction of tokusatsu, manga, and animation development. Besides, robot representation artworks of this kind have inspired industrial robots, movies, and robot development projects. To a certain extent, throughout the decades, the robot as a character, beyond its usability, has been positioned at the core of Japanese Media. The representation of robots has been critical in terms of mechanical design and visual expression, overlapping Japan's image as a country that has been rebuilt and achieved rapid economic growth, excelling in the trade of advanced technological products. The cutting-edge ideas and concepts of science and technology reside in robots and have been recognized by the world, leading to the high technology impression in animated images.

Most Japanese born in 1960 were the first generation to have TV and experienced watching TV animation. Osamu Tezuka's *Astro Boy* kicked off the era of televised animation, and in the late sixties and start of seventies, artists started developing robot representation. Initially, a common theme was that children would control the robots as weapons, and the robots themselves had infantilizing round figures.

In this period, two manga adapted to animation had elements that would change the round figure childish robot into the *Super Robot* genre, that is, scientific giant humanoid robots. First, *Tetsujin 28-go* (1956) manga was written by Mitsuteru Yokoyama, with the animated version airing on Fuji TV from 1963 to 1966. It was one of the first representations to have a giant robot at its center and is the ancestor of all giant robot anime shows. The story plot is that the Imperial Japanese Army developed the giant robot Iron Man No. 28 at the end of the Pacific War as a secret weapon for reviving Japan. The main character, Detective Boy Shotaro Kaneda, is caught up in the struggle for the small remote-controlled device that allows him to control the robot.

Additionally, *Eight-Man* is a manga (８マン, 1963-1966) and anime (1963-1964) created by writer Kazumasa Hirai and manga artist Jiro Kuwata. This is one of the earliest cyborg superheroes predating Ishinomori heroes *Kamen Rider* and *Cyborg 009*. Yoshie Kawahara, a novelist and screenwriter that worked as an assistant in the animations *Invincible Superhero Zambot 3* (無敵超人ザンボット 3, 1977) and *The Ultraman* (ザ☆ウルトラマン), an animated

version of the original tokusatsu, professed her admiration for Eight-Man: “My first love was *Eight-Man*. He was not a human *East Detective*. It was that robot, whose dismounted arm was controlled by a microelectronic brain and whose ‘8’ on its chest when opened, revealed a micro nuclear reactor inside.” (Kawahara, 1998, p.66, my translation[146]).

With the broadcasting in the 60s of *Ultra Q*, *Ultraman*, and *Ambassador Magma*, the tokusatsu heroes started using suits made with latex, vinyl, and props. In the 70s, the works of Ishinomori were adapted for television with titles such as *Kamen Rider* (1971-1973), *Jinzō Ningen Kikaider* (1972-1973), *Inazuman* (1973-1974), *Robotto Keiji* (*Robot Detective*, 1973), and *Himitsu Sentai Goranger* (1975-1977) the first *Super Sentai* series. The tokusatsu genre filled the television broadcasting time, competing with animation series. Especially, *Kamen Rider* was a significant influence on the *henshin* (transformation) boom, in which the characters would transform or morph to enter battles with monsters and engineered humans. In this context, the 1970s animators also began designing robot characters with celluloid, which made it possible to accentuate the gleaming of the metallic robots within the medium itself.

[146] “「初恋の相手は、「エイトマン」だった。人間「東探偵」ではない。外れた腕を「超小型電子頭脳」で操り、胸の「8」の文字を開くと、なかには「超小型原子炉」の見える、あのロボットにである.”

3.1.2. Gatchaman and Mazinger Z

Tatsunoko Productions was established by three brothers, Tatsuo Yoshida and Kenji Yoshida, and manga artist Ippei Kuri (real name Toyoharu Yoshida). Ippei Kuri worked in Kyoto, but he moved to Tokyo to join his two brothers on the quest to make their company in 1962. The company started to work with manga and later moved on to create animation works. The change to animation was partly influenced by Hiroshi Sasagawa (笹川, ひろし) who advised Tatsuo Yoshida about animation production. Sasagawa worked as an assistant to Osamu Tezuka and got introduced to the animation world when Tezuka visited Toei Dōga (now Toei Animation). Sasagawa says in an interview:

> Later, I became an independent manga artist, but there was a series of discontinuation of monthly magazines, so I told Tatsuo Yoshida, whom I met then, "Animation is also good; why don't you do it?" I didn't blindly suggest it. He thought his unique "studio style" could be applied to animation. (Misawa; Nakagawa, 2021, p.168, my translation[147])

Since Tatsunoko was divided into the three Yoshida brothers and assistants, they collaborated to write the story, draw the main characters, and paint the scenery. In the case of Tezuka, even though he had assistants, it was only his style and works featured under his company. In an interview, Ippei Kuri (Toyoharu Yoshida) says that Toei Dōga approached Tatsunoko with the idea of animating *Space Ace*. "We accepted the project, but the production company said we would have to sell all copyrights, including the characters, to them. The price was too low, and we could not come to an agreement." (Misawa; Nakagawa, 2021, p.160, my translation[148]). Since the agreement failed, *Space Ace* (宇宙エース, 1965-1966) was the first anime made by Tatsunoko Productions, without Toei's collaboration, and was aired on Fuji TV.

[147] "その後、私は漫画家として独立したけど、月刊誌の廃刊が相次いだこともあって、そのころ知り合った吉田竜夫さんに「アニメもいいですね。やりませんか」と盛んに言ってたんです。やみくもにそそのかしたわけではない。独特の「工房スタイル」が、アニメに応用できるとにらんだのだった."

[148] "引き受けたものの、制作会社側はキャラクターなどすべての著作権をそちらに売り渡さないとダメと言う。その値段が安く、どうしても折り合わない."

Jinzo Toriumi was a scriptwriter who worked on several scripts for Tezuka before joining Tatsunoko, where he became the head of the planning and writing department. His talent as a scriptwriter was an excellent addition to the team, and his contributions would help *Space Ace's* ratings, as he describes it. "The ratings for *Space Ace*, which was in production, suddenly rose from the ninth episode, which I wrote. I was lucky. Until I quit in 1977, I wrote all the original animation proposals." (Misawa; Nakagawa, 2021, p. 176, my translation[149]). They went on to launch many other animations in the sixties. However, it was *Science Ninja Squad Gatchaman* (科学忍者隊ガッチャマン, 1972-1974), a five-member superhero ninja team that morphed into superheroes to fight robot monsters, that brought aesthetic changes to the genre. *Rainbow Sentai Robin* (1965) already had presented the idea of a squadron fighting; however, *Gatchaman* brought special weapons and mechanical vehicles besides the ability to morph into superheroes.

> The eldest brother, Tatsuo, and Kuri's originality and realistic portrayal of people with a touch of *gekiga*. The detailed mechanical design. Smooth movements. It was not only the boys who were fascinated by the artistry, which broke the common TV animation standard of 3000 celluloid pictures for a 30-minute program. The maximum number of celluloid pictures used for a single program was 6000, and the average was 4500. (Misawa; Nakagawa, 2021, p.164-165, my translation[150])

Their aesthetic innovation of mixing *gekiga*[151] style and the use of more cel frames to depict the mechanical design and the fighting movements were a success and also inspired further works in this direction. The art department responsible for the mechanical design was led by Mitsuki Nakamura and the newcomer at the time, Kunio Okawara. Okawara describes how he entered Tatsunoko: "I was still a rookie, but Mitsuki Nakamura, the art director, invited me to try my hand

[149] "制作中の「宇宙エース」は、僕が脚本を担当した九話から急に視聴率が上がった。ラッキーでしたね。以降、七七年に辞めるまで、オリジナルアニメの企画書はすべて僕が書きました."

[150] "長兄の竜夫さんと九里さん本来の持ち味の、劇画タッチでリアルな人物造形。緻密なメカデザイン。そして滑らかな動作。三〇分の番組でセル画三〇〇〇枚という当時のテレビアニメの常識を、打ち破る出来栄えに魅了されたのは、男の子だけではなかった。セル画は一本につき最高で六〇〇〇枚、平均四五〇〇枚は使いました."

[151] Gekiga (劇画) is a style of manga that brought realistic and more mature stories to the world of manga. In 1959, a group of manga artists created the Studio Gekiga (劇画工房), and to explain their proposal, they wrote and printed the postcard "Information on Gekiga Studio" (劇画工房のご案内), respectively signed by the artists: Takao Saito, Masaaki Sato, Fumiyasu Ishikawa, Shoichi Sakurai, Tatsumi Yoshihiro, Susumu Yamamori, and K・元美津 (K・Motomitsu). They sent the postcard to various media outlets and established manga artists, including Tezuka Osamu. Even though the group soon disbanded, their approach of utilizing sharp angles and dark and hatching lines in their theme of mature and socially engaged manga profoundly impacted the manga world from the 60s to the 70s. For the complete "Information on Gekiga Studio" text, see Tatsumi, Y. (2014), pp.281-282.

at *mecha* design. Mr. Nakamura could not handle the job by himself, and he wanted to elaborate on the props. So, I was lucky." (Misawa; Nakagawa, 2021, p.204, my translation[152]). In the animation, there are many scenes that lead to the transformations and merges of robots that would become popular. It was only in 1976 that Tatsunoko entered the giant super robot trend with *Gowapper 5 Go-dam*, which brought a female leader to the fighting squadron.

Gatchaman aired simultaneously as *Mazinger Z* (1972-1974), produced by Toei Dōga and broadcast on Fuji Television. *Mazinger Z* was created by Go Nagai. He had the idea of having a person inside the cockpit to control the robot while looking at a car. This idea would become a prototype for subsequent robot animations. Before making his debut as a manga artist, Go Nagai worked as an assistant to Ishinomori Shotaro. Nagai says that after Ishinomori Shotaro read *The Black Lion* (黒の獅士), he asked Go Nagai to be his assistant. "At that time, Mr. Ishinomori was working on everything from gags to science fiction, such as *Cyborg 009*, so I learned a lot from him as an assistant." (Nagai, 1992, p.40, my translation[153]). Go Nagai drew light-hearted gag manga before entering the science fiction theme. His manga *Devilman* (1972-1973) was animated by Toei, and he explored a darker theme of hero and antihero figures. Because Toei needed to find a new project, Nagai proposed *Mazinger Z*.

> This was my first robot animation program. Until then, *Astro Boy* by Mr. Tezuka and *Tetsujin 28* by Mr. Yokoyama had been broadcast. Atom has a personality but a machine inside his body, while Tetsujin is a remote-controlled robot. I wanted to create something different from the robots of the past. I thought it would be interesting if a human could get into the robot and control it like a car. (Nagai, 1992, p.151-152, my translation[154])

The scriptwriter was Keisuke Fujikawa, who had been actively working on tokusatsu productions in Tsuburaya Productions up until entering the animation world with *Mazinger Z*.

[152] "まだ新人でしたが、美術監督だった中村光毅さんから、「メカデザインをやってみないか」と誘われた。中村さん一人ではこなし切れないのと、小道具に凝りたかったようです。運が良 かったですね."
[153] "そのころの石ノ森先生は、『サイボーグ 009』とか、ギャグから SF まで何でもやっていらしたので、アシスタントをしていてとても勉強になりました."
[154] "これがぼくにとって、初めてのロボットアニメ番組でした。 それまでは、手塚先生の『鉄腕アトム』とか、横山先生の『鉄人 28 号』が放送されていました。アトムは人格をもっているが体の中は機械、鉄人はリモコン操縦のロボットです。ぼくはそれまでのロボットとは違うものをつくりたかったのです。人間がロボットの中に乗り込んで、車みたいに操縦できたらおもしろいなということで考えたんですけど、世界的にみても、人間操縦型のロボットというのは、マジンガーZ が初めてでした."

Fujikawa, says: “At that time, Mr. Nagai would just send us pictures of enemy mechanical beasts. I would look at them and come up with the storyline, which was fun to write.” (Misawa; Nakagawa, 2021, p.189, my translation[155]). Fujikawa would also be responsible for the script sequel *Great Mazinger* (1974-1975). In the *Mazinger Z* narrative, the robot is made of a superalloy called *Chogokin Z*, which is said to be forged from the Japanium metal that generates photonic energy, making *Mazinger Z* the most powerful robot.

> Under the influence of *Ultraman*, the mechanical monster ‘Kikaijū’ appeared in every episode of *Mazinger Z*. It was always defeated in the end, so became commonly known as a ‘beaten mecha.’ However, this is the name used by the audience, and in many cases, they are called ‘monsters’ at the production site. (Hikawa, 2000, p.21, my translation[156])

Furthermore, Murakami Katsushi, an industrial designer belonging to Poppy, a subsidiary of Bandai, created the superalloy (zinc alloy toy) design of *Mazinger Z*, called *Chogokin Mazinger Z* (1974). Murakami used die-cast (metal) as the material and launched a prototype that packed a variety of gimmicks, such as rocket punches and precision modeling not seen in earlier polypropylenes. Thereby, the action figures echoed the entire experience of the narrative through its visual aesthetic, transposing it to the toy figure. As a designer for Bandai toy manufacturer, Murakami’s position to commercialize three-dimensional objects set him apart from other designers.

After the success of *Mazinger Z*, Murakami worked with tokusatsu and animation mechanical designs, intending to turn them into manufacturable toys. In Tokusatsu, he was involved with *Inazuman* (1973), *Leopardon*, the giant robot in the tokusatsu *Spiderman* (1978) by Toei, and the metal hero *Space Sheriff Gavan* (1983), among others. In terms of mechanical animation designs, he collaborated with Yoshikazu Yasuhiko, that was in charge of the clean-up mechanic design for *Brave Raideen* (勇者ライディーン, 1975) and *Chōdenji Robo Combattler V* (1976) in which Kazutaka Miyatake made the mechanical designer. After *Brave Raideen* (1975), which aimed to be commercially post-Mazinger era, robots designed to be made into toys

[155] “当時は、永井さんから敵の機械獣の絵が送られてくるだけ。それを見ながらストーリーを考えるのですが、書いていて楽しかった.”
[156] “「ウルトラマン」の影響で、「マジンガーZ」にはメカの怪獣「機械獣」が毎回登場した。 必ず最後には倒されるので、通称「やられメカ」と呼ばれる。もっともこれは観客側の呼称で、制作現場では単に「怪獣」と呼ばれているケースが多い.”

accelerated. Kazutaka Miyatake started working with illustration with *Kamen Rider* and then *Mazinger Z*, explaining this process in this interview.

> Miyatake: Yes. When I published a three-sided illustration of the Discovery issue in a coterie magazine, someone from the publishing industry was checking it out, and someone from Ishimori Productions asked, "Can you do an illustration of the *Kamen Rider's* Cyclone issue for us?". That was a big hit, and this college student started getting job after job. Mr. Go Nagai liked the illustration and asked me to do a perspective drawing of *Mazinger Z*. (Tane, 2015, p.35, my translation[157])

Kazutaka Miyatake, Kenichi Matsuzaki, Haruka Takachiho, and Naoyuki Kato were all members of science-fiction clubs, and they decided to start a company called Crystal Art Studio, the predecessor of Studio Nue. They also frequented the Japan Science Fiction Convention (TOKONS). Mainly, Kazutaka Miyatake worked with mechanical designs for *Zero Tester* (ゼロテスター, 1973), a science fiction animation series produced by Sunrise Studios and Crystal Art Studio (future Studio Nue). "He complained about 'too many lines' in Sunrise's *Zero Tester*, and when he finally learned to reduce the number of lines, Mr. Nishizaki told him to "add more lines" in Yamato." (*Animage*, 2012, 7(409), p.85, my translation[158]). He would become known for the internal anatomy diagrams of robots and detailed mechanical lines. One of Miyatake's artistic inspirations for this approach was the illustrator Shusei Nagaoka.

The emergence of these heroes, monsters, and vehicles as objects of children's desire came to form the foundation for the later success of Robot Anime in the 1970s. In the early stages of the TV series, manga and animation were treated as the primary material, with the products containing the characters or logo from a given show playing a secondary role. However, the monster + hero + machine paradigm inverted the roles, with sponsors and companies having more control over the character's design and setting.

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[157] "「宮武：そうですね。ディスカバリー号の三面図を同人誌に載せたら、出版関係者がチェックしていてくれて、石森プロの関係者に「仮面ライダーのサイクロン号の図解を頼めるか？」と言われまして。それがウケて、只の大学生に次から次へと仕事が来るようになった。永井豪さんもその図解を気に入ってくれて、頼まれたのがマジンガーZの透視図でした."

[158] "「サンライズの『ゼロテスター』で「線が多い」って文句を言われて、ようやく線を減らす事を覚えたら、「ヤマト』では西崎さんに「もっと線を入れろ」と言われたと."

3.2. Effects and Liveliness in Space Battleship Yamato

Space Battleship Yamato (宇宙戦艦ヤマト, 1974) innovated by depicting the drama of mechanical machines manipulation while making full use of the outer space stage. It marked the beginning of showing a collective drama that would inspire animations such as *Mobile Suit Gundam* (機動戦士ガンダム, 1979-1980) and *Space Runaway Ideon* (伝説巨神イデオン, 1980). The series was produced and written by Yoshinobu Nishizaki, Eiichi Yamamoto, and Keisuke Fujikawa and directed by manga artist Leiji Matsumoto. Before *Yamato*, Matsumoto had success with the manga *Otoko Oidon* (男おいどん), depicting the coming-of-age of the main character, Oyama Nobota, with a messy background of old meters and slits and sharp-edged mecha. Since Matsumoto came from the manga world and was unsure about certain technical aspects of animation production, Noboru Ishiguro was assigned as Chief Director to assist Leiji Matsumoto.

> Ishiguro CD is also a long-time science fiction fan. His various experimental techniques (such as the extensive use of ripple glass and mask photography), the bold composition of the Yamato as a dot in space, the unique form of the explosion in the weightless state that radiates out from his background as an effects animator, the waves, the rocks, and the waterfalls, etc., is truly brilliant. The skillful depiction of natural phenomena such as waves and rock destruction gave Yamato its distinctive flavor. (Nakatani; Kushino, 182, p.34, my translation[159])

Kazutaka Miyatake worked as a mechanical designer as part of Studio Nue, and in the sequels of Yamato. Additionally, Studio Nue created designs from various angles for the animation based on Matsumoto's rough designs and created original designs for the different props, mechanisms, and artwork. The scriptwriter Keisuke Fujikawa that worked both in tokusatsu and animation was approached by Yoshinobu Nishizaki to become part of the project that initially had been planned to be a *tokusatsu drama*. Fujikawa describes this moment in an interview: "At first,

[159] "石黒 CD も、古くからの SF ファンであり、種々の実験的手法 (波ガラスやマスク撮影の多用など)、宇宙空間の中に点のようなヤマトがいるといった大胆な構図のとり方が実に見事で、エフェクト・アニメーター出身ゆえの放射状に広がる無重力状態での爆発の独特なフォルムや、波や岩くずれのような自然現象の巧みな描写はヤマトに独特なにおいを与えることになった." Translation note: In this case, the CD is an acronym that means Chief Director.

they came to me, wanting to do a tokusatsu film. That project didn't materialize, but then he approached me and said he wanted to do a sci-fi animation for adults. I thought, "I've got a chance" when I heard that." (Misawa; Nakagawa, 2021, p.190, my translation[160]). At that time, working on animation was considered a lower position, and scriptwriters were not very socially recognized. The production studio was called *Office Academy* (オフィス・アカデミー) and was located in Sakuradai, Tokyo. In 1974, then young Ryūsuke Hikawa took a tour of the production site and described the space division.

> The first floor was a bakery; the second floor was office space and a drawing room; the third floor was a workshop for filming, etc. (entry was strictly prohibited, so my memory is hazy.) The fourth floor was the main production room and administrative and art-related areas, but this was a 2DK in an ordinary apartment. The rooms for production and setting were on tatami mats, and the art department was working in the kitchen. The bathroom was used to store large-format celluloid. (Hikawa, 2012, vol.9, p.533, my translation[161]).

The studio was a DIY space created inside a common apartment. At that time, Noboru Ishiguro was responsible for creating effect animation (エフェクトアニメション). This field is set apart from character animation; the animation of effects is responsible for achieving different depictions and textures for waves, natural elements, and so on. In science fiction-based stories, animators have been working on ray beams, explosions, debris, mechanical parts, etc. In sum, it is the tokusatsu of the animation world. It is a highly stylized area that introduces secondary information that provides a sense of materialism or density to the image. The complexity of intentional movement powered by the effects creates liveliness in the image. According to Chow (2013), liveliness corresponds to primary and secondary liveliness in animation. The first focuses on a particular progressive action, usually the main characters. The secondary gives complex movement cues to the whole, creating and holding that world materiality to the viewer. Takashi Hashimoto (橋本, 敬史) worked with Hayao Miyazaki and Hideaki Anno, and other directors, and

[160] "最初、特撮ものをやりたいと、私を訪ねてきました。その企画は実現しなかったけど、次に「大人向けの SF アニメをやりたい」と持ちかけてきた。それを聞いて、私は「チャンスがきた」と思った."

[161] "1 階は、なんとパン屋だ。2 階は事務所スペースで作画ルーム、3 階が撮 出しなどの作業場(立ち入り厳禁だっ たので記憶があいまい)。4 階が中枢 にあたる演出ルームと事務・美術関係だが、ここに至っては普通のマンショ ンの 2DK である。 演出と設定関係の 部屋は畳敷きで、美術はキッチンをつぶして作業を行っていた。さらに風呂場は大判のセル倉庫になっているという具合である."

specialized in drawing mecha and effects. In an interview, Hashimoto explains how the effect animation gave dept to the characters.

> Hashimoto: Effects are important. In *Steamboy*, Katsuhiro Otomo told me that the smoke behind the character was one of the characters and that I should express the character's emotions through the smoke. He told me that the smoke behind the character was one of the characters and that I should express the character's emotions through the smoke. (Ozawa, 2019, p.187, my translation[162])

In Chow's analysis of types of liveliness in a broad spectrum of animations, he notices a specificity about the Japanese case. "Japanese popular animation (called anime in the Western context) seems to present a balance of the two types of liveliness; both featured prominently from scene to scene." (Chow, 2013, p.58). The observation that there is a certain balance between the two types of liveliness also attests to how the effect animation evolved mutually in Japan, inside the animation world, and in collaboration with tokusatsu.

The distribution of color in the first episode of the series is used in exciting ways to articulate the scenes' narrative and emotional aspects. For example, when Capitan Juzo Okita is on the bridge, the color changes to a reddish monotone when the emergency lights are turned on after the ship is hit by the attack of the alien race known as Gamilas. Since Hikawa had access to the cel materials in the studio in 1974, he took photographs of the cel before they could fade or be destroyed. He describes how they worked to create specific color aspects at that time.

> Last time I talked about the cold view outside the window of Captain Okita's bridge while the interior was stained in a red monotone. Although a filter of "red para" (paraffin) was used in the photography, it should also have turned the space outside the window red. However, it was separated to look normal. This was the effect of "multiple exposures." A black "mask" was used to cover the window frame, and the interior was photographed once with red paraffin over the interior. Then the film was rewound, and a reversed black part

[162] "橋本: エフェクトは重要で,『スチームボーイ』で大友克洋さんに言われたのが、キャ ラクターの後ろにある煙もキャラクターのひとつで、キャラクターの感情を煙で表現し なさいと。普通に漂っているだけではなくて、手前のキャラクターの内面も表現しなさいということでした."

covered the bridge cel so the exterior portion could be shot normally. This is a mechanism by which the two worlds are composed. (Hikawa, 2012, vol.10, p.486, my translation[163])

This description of the use of masks to shoot layers separately and later compose with them to create color gradations and meanings in the narrative is very similar to the use of masks in visual composition. Color is also used to differentiate between the spaces depicted in the animation, with dull colors being used to identify leisure and common places inside the ship or in the underground living space on Earth. However, the design of the main body of Yamato was so heavy in the number of lines and thought to be unsuitable to be animated, so the animators had a difficult time with the production and animation process. "The complex curves (curved surfaces) of Yamato's *mecha*, which are characteristic of Matsumoto *mecha* and Yamato, were difficult to shape and it is said that it made the animators cry." (Nakatani; Kushino, 1982, p.38, my translation[164]). Additionally, because the animation emphasized the weight of the mechanics of Yamato, the movements had to be slow, with a large number of medium-length sections, which took a long time to produce. Because of the technical challenges, simple mistakes that could have been avoided, such as misplaced cells, smudges, and scratches, can be noticed.

The expression of color and light was made utilizing mainly two technics: mask photography to shoot colors and compose with different planes in the frame, and the ripple glass. The rippled glass has a wavy surface distortion and is inserted between the cel and the camera and moved frame by frame to create a dynamic and distorted image. Today this effect can be easily made in software, but at this time, this technique performed the materiality of creating an atmosphere. It can create the presence of something transparent, such as the setting sun, the mist that glows in the air after an explosion, and so on. The ripple glass effect also produces a presence of three-dimensional space in a bi-dimensional cel.

The optical effect can be achieved by utilizing glasses and camera lenses, which was the principle behind the Optical Printer. This dual-camera system allowed such effects in tokusatsu

[163] "前回紹介した神田艦のブリッジから窓外のゆきかぜを見るカットでは、室内のみが赤いモノトーンに染まっている。赤味は「赤バラ(パラフィ ン)」を撮影時にかけたフィルタワークだが、もしそうなら窓外の宇宙空間の被写体も赤く染まっているはずだ。なのに、ノーマルで分離されている。これこそが「多重露光」による効果である。窓枠に相当する部分を「マスク」という黒いセル画で覆い、一度は赤バラをかけて室内部分を撮影する。フィルムを巻き戻して黒い部分を反転したセル画でブリッジ内を覆い、バラを外して外をノーマルで撮影する。これによって、2 つの「世界」が「合成」される仕掛けである."

[164] "ヤマトに限らず、 松本メカの特徴といえる複雑な曲線(曲面)で構成されたヤマトのメカは、形がとりにくく、アニメーター泣かせだったという."

and live-action movies. In producing masks and cutting them into positive and negative, it is possible to protect a portion of photosensitive film over several exposures and work on image layers. In doing so, it is possible to combine multiple images into one image, which is then re-photographed on a new film.

This process was also being developed and utilized by animators that wanted to produce optical effects to create a sense of liveliness and materiality in their works. The main difference is the amount of time working in each frame to achieve continuity, depending on how many elements are manipulated in the image. In the absence of expensive apparatus, it was possible to create the optical effect by utilizing materials such as the ripple glass between the cel image and the camera to distort the image. In a sense, the ripple glass works as a second camera layer, distorting and adding texture to the final result.

Another important point is that the animation stand makes it possible to combine celluloid images, backgrounds, and other materials into a single image, which originally included optical compositing functions. The post-production process can be realized in the shooting by adding elements and paying close attention to the camera position. Because of these principles, animation can be composed by cutting and manipulating the masks of a cell on the table of the animation stand, depending on the animator's ability. However, due to the structure of the animation stand, there is a limit to the number and direction of materials that can be moved laterally on the same screen. It was also not possible to move in different axial directions simultaneously. Making optical effects is also a challenge because the position of the camera and the cel composition must be calculated precisely.

In episode four of the series, *Yamato* performs warp travel (see Figure 7). To create the distortions to enter the warp space, there is a great use of optical effects to cause image and color distortions. "The surrounding stars and effects and the main body of Yamato are clearly multiple exposures since they are distorted differently. Furthermore, the celluloid area is changing to rainbow colors, so it is either a brush sliding over a solid color or further multiple exposures." (Hikawa, 2012, vol.13, p.428, my translation[165])

[165] "周囲の星やエフェクトとヤマト本体は、別の歪み方をしているので、明らかに多重露光である。さらに、セル画の部分は虹色に変化しているため、ベタ塗りの上にブラシをスライドさせるか、さらに多重露光したもの."

Figure 7 Warp travel scene in Yamato[166]

In Figure 7, the image of Captain Okita is divided into three separate colors, with simple multiple exposures. The image on the right side is *Yamato* pushing through warp space, with multiple exposure effects. With software development, compositing has become simple in the digital age. However, to create such effects at this time meant that once the film has been exposed to light, an image is burned into it via a chemical change, and it cannot be erased.

A discussion panel took place in Shinjuku on May 18, 2010, between the director of *Space Battleship 2199* (2012), Yutaka Izubuchi, and Yoshikazu Yasuhiko, the staff member of the *Space Battleship Yamato*. The discussion was subsequently published in *Animage* (2012/7, vol.409). Yoshikazu Yasuhiko worked on the storyboards of almost half of the series, and he was instructed to include long shots in the sequence. Yamato was one of the first series to have long shots because, in robot animation, the sequence varied between bust shot, and bust turnaround, with a close-up of an explosion in the background. To create long shots with the impression of materiality in weightless motion and give weight to scenes, they had to break rules that were made to save time and resources. As such, Yoshikazu Yasuhiko comments on how surprised he was by the effects used in Yamato:

> So, I was summoned to the studio in Sakuradai and saw the pilot film, and I was amazed to see how different it was from what I had made. The background kept receding, but the spaceship came into the foreground. It was an optical composition, and I wondered how

[166] Still-image from *Uchuu Senkan Yamato* (Battleship Space Yamato). 2012. Leiji Matsumoto, Noboru Ishiguro (dir. et al.) (first season, 1974-1975). Japan: Bandai Visual (10h40min) (Blu-ray DVD box).

> they could do such a thing. Then the producer (Yoshinobu Nishizaki) got very angry in front of the staff. "This is not good enough!" What is he complaining about? I was surprised twice. That was my first impression of him. (*Animage*, 2012, 7(409), p.84, my translation[167])

Another technical aspect is that in optical compositing in live-action, the moving object is usually set on a blue screen because the mask is later extracted (from a positive to a negative). It is then possible to combine the background image to the center mask and then reshoot it to an optical printer. However, that was not the case in *Yamato*. As mentioned in the animation stand, the idea was to share the subject (the cel) with the mask on the table. A light is shone from under the table, so the cel was lined up so that the light could not pass through them. The camera then skips one frame at a time. First, the cell is lit from the surface and photographed. The material is lit from the back in the next frame, and a masked image is taken at the same position. Repeating this process produces a film image in which the material and the male mask are skipped every other frame. Then, they can be isolated in a laboratory lab to produce one film of the image and a separate film of the mask. Additionally, the female mask can be generated by reversing the male mask with lab processing. Noburo Ishiguro, that worked with the special effects for Yamato explained and is cited by Hikawa about how much effort optical composition took for animation.

> During this time, I was asked to experiment with elaborated camera setup methods to make composition photography which we called "skip photography," by which the filming department charged me an exorbitant fee, and Mr. Nishizaki almost fired me. The director of photography, while looking at a statistical chart of camera work, was complaining that it took three times as much time and effort to shoot as in standard animation. (Hikawa, 2012, vol.13, p.428, my translation[168])

[167] "それで桜台のスタジオに呼ばれて、パイロットフィルムを見せられたら、自分の作ってきたものと、あまりに違うからたまげた。背景がずっと後退しているのに宇宙船が手前に来るとかね。オプチカル合成だったわけだけど、なんでこんな事できるんだろうって。そしたらスタッフを前に(西﨑義展)プロデューサーが怒りまくるわけ。「これじゃダメだ!」って。「なにこの人、どこに文句あんの?」と二度ビックリ。それが、彼の第一印象."

[168] "ぼくはこの間に、スキップ撮影というえらく手のこんだ合成撮影をやらせて、撮影部から法外なギャラを請求され、西崎氏から危うくクビにされそうになったりしながらも、今迄考えていた手法や思いつきを次々実験していた。それは主に撮影に負担がかかる事が多く、撮影監督がカメラワークの統計表を見ながら、普通のアニメの三倍手間がかかるとボヤいていた."

It becomes clear that the idea was to use optical composition to depict surreal visual expressions. Until *Yamato,* science fiction anime had been a fantasy scenario with scientific elements; however, *Yamato* was the first full-fledged science fiction anime that aimed at adults. The principle of manipulating light and effects through camera lenses combined with an artist's composition abilities made Yamato a fan favorite. It also attests that mask composition, light manipulation, and camera work are essential to creating images that transcend the apparatus. The technical aspects are malleable to the expression and emotion that is to be conceived to the audience. That said, emotional cues usually are enforced by secondary cues of liveliness which depends on a combination of technical mastery coupled with a capacity to convey empathy and *pathos*. However, despite its innovative approach, Yamato, which was scheduled to run for 38 episodes, was canceled after 26 episodes due to poor viewer ratings. However, the movie *Space Battleship Yamato: The Movie* (1977), directed by Noboru Ishiguro and Toshio Matsuda, consisted of the original series of edited arcs, and it became a huge success. It was the same year of *Star Wars* (1977), and the space opera genre became a hit-maker.

Figure 8 Spaceship smashes into Mars (Ep.1)[169]

[169] Still-image from *Uchuu Senkan Yamato* (Battleship Space Yamato). 2012. Leiji Matsumoto, Noboru Ishiguro (dir. et al.) (first season, 1974-1975). Japan: Bandai Visual (10h40min) (Blu-ray DVD box).

In episode one (see Figure 8), the spaceship Sasha smashes into Mars, with the explosion effect being made by Ishiguro, with red waves being circumscribed by white and yellow colors. To give a feel of texture in this shot, it is said that the surface of this cel image was painted with a finger. The sense of liveliness that Chow (2013) discusses in animation is intrinsically connected with embodiment. Humans can only experience the world through the sensorimotor experience, which is possible to interpret through sight, touch, and self-localization in space and time. That is why, when Yutaka Izubuchi and Yoshikazu Yasuhiko discuss the combination of free-hand drawing and CGI, they present essential points of what they perceive about these styles.

> Yasuhiko: I think it is a good thing that the pencil touch is retained and the smoothness of the CG is reduced to increase the hand-drawn feel, a sensibility unique to Japan, which has struggled in a limited environment. Where does this lead us? Foreign countries freely use realistic CG, but I think Japan is correct not to go in this direction.
> Izubuchi: Rather than 3D modeling and motion, I'm trying to give it warmth.
> Yasuhiko: A handmade feeling is essential, after all. It leaves room for the imagination. It differs from a complete CG, and Japanese animation can't compete in that direction.
> Izubuchi: Even when using CG, I aim for a form close to that of the cel animation era. Not with 3D textures, but with 2D CG. Because characters are still in 2D, I feel more comfortable with them on the screen. (*Animage*, 2012, 7(409), p.87, my translation[170])

Yasuhiko worked in the first *Yamato* and utilized hand-drawing techniques. Yutaka Izubuchi was the general director for *Space Battleship Yamato 2199* (宇宙戦艦ヤマト 2199, 2013). Izubuchi made character designs for *Gundam*, *Evangelion,* and numerous tokusatsu shows *Choudenshi Bioman* (1984-85), *Choushinsei Flashman* (1986-87), *Kamen Rider Agito* (2001-02), and others. For *Space Battleship Yamato 2199,* Izubuchi uses CGI but aims to get closer to a cel

[170] "安彦: 鉛筆タッチを残したり CG の滑らかさをあえて減らして手描き感を増すのは、リミテッドで苦労してきた日本ならではの感性で、俺はすごくいい事だと思う。それでどこへ落ち着くのかね。外国みたいなリアルな CG は勝手にやってもらって、日本はそっちへ行かないのが正しいと思うんだ。出渕: 3D でモデリングして作りましたというものが動くよりは、温かみを出そうとしています。安彦: やっぱり手作り感が大事だよね。その中には想像力の入りこむ余地が、きっとあるんです。それは至れりつくせりの CG の方向性とは違うもので、日本のアニメーションはそっちじゃ勝負にならないですよ。出渕: CG を使っても、セルアニメ時代のものに寄りそうような形をめざしていきたいですね。3D 的な質感ではなく、あくまで 2D としての CG で。キャラクターは絵 (2D)ですから、やはり同じ画面内ではその方がしっくり来るんです."

animation feel by utilizing 2.5D[171] techniques. Within CGI technology, one of the trends in Japanese animation has been to combine CG with 2D surface touch. Because animation in Japan has been closely associated with cel hand-drawn techniques, the idea was to adopt costly beneficial technologies but integrate them into the already established aesthetic model. The use of cel drawing touch in the digital environment comes from an idea of presence or embodiment. The presence of the hand's texture endows the image with a sense of liveliness. "On the other hand, through experiencing these phenomena of liveliness, we feel that our bodies are in touch with the digital objects." (Chow, 2013, p.2).

The second cue that creates liveliness can enhance the indication of human presence coupled with the intentional feeling of the artist's hands left on the image. In a sense, the qualities of effect animation brought in the original *Yamato,* and the feeling of liveliness gave a chance for viewers to create affect towards the image. When Yasuhiko says, "A handmade feeling is essential, after all. It leaves room for the imagination", this is where the viewer comes into play, where the embodiment and the media can connect. In the next session, this research focuses exactly on how the closeness of the fans to the image would create communities and change the media landscape.

[171] 2.5D is a representation of the three-dimensional shape of an object as seen from one direction and is called 2.5D in the sense that it is between two and three dimensions. It is distinguished from 3D by the absence of information about the backside or interior of an object. It is usually represented in the form of 2D data with additional information.

3.3. DIY fanzines to specialized publications

Yamato not only opened up a new field of animation but also provided the basis for developing anime fan clubs, which had been few and far between. At that time, Tatsuya Nakatani and Asami Kushino started making a fan club for Yamato. Kushino says that after falling in love with *Yamato*, she went to the Office Academy (the producing studio) to visit and see more details about the animation and discovered like-minded fans there. "I joined the Yamato fan club that Mr. Nakatani and his colleagues were planning to create as a liaison and journal-writing staff (in other words, a chore)." (Kushino, 1982, p.48, my translation[172]) Because at that time, there were no magazines specializing in anime and no video recorders. Kushino and other fans decided to create a DIY format to preserve materials related to Yamato with a fan club. They started gathering members by asking to be listed in the reader's column of the SF Magazine (SF マガジン) to recruit members. The response was positive, and the fan club attracted many people, fans of Leiji Matsumoto manga, science fiction fans, high school students, and older people with war memories.

"Some of the older people contacted us because they had been involved with the battleship Yamato during the war and felt a deep nostalgia for this *Yamato*." (Kushino, 1982, p.48, my translation[173]). It was named – C.B. ヤマト、Lab – which stands for *Cosmo Battleship Yamato Laboratory* (CBYL), and the club was active from April 1975 to January 1976. The success meant many people joined, with activities alternating between a newsletter and a fanzine containing information about Yamato. The fanzine included several names *Yamato* (ヤマト), *Yamato Land* (ヤマトらんど), *Yamato Books* (ヤマト Books), and so on. The number of members was on the verge of being a thousand, so they had to dissolve the group.

They reformed the idea, and Nakatani and Kushino created a new group named the *Yamato Association* (YA) – (ヤマト・アソシエイション) and limited the number of members. In an interview conducted by Koichi Fuzukumi with Hikawa Ryūsuke, he mentions the enrolment of the later in the Yamato Association. "Cover of the first issue of the *Yamato Association* newsletter

[172] "中谷さんたちが作ろうとしていたヤマトのファンクラブに、連絡兼会誌清書係(つまり雑用ね) として参加することになりました."

[173] "中には、戦時中、戦艦大和にかかわりがあって、この「ヤマト」に深い郷愁を感じて—という年配の方からも御連絡をいただきました."

(1977), a Yamato fan club of which Hikawa was president while at university." (Fukuzumi, 2017, p.13, my translation[174]).

They created a newsletter called the *Cosmonaut* and continued with *Yamato*, *Yamato Land*, and other fanzines. In 1977, a club named C.B.Y.C. (*Cosmo Battleship Yamato Connection*), published their fanzine *Iscandar* (イスカンダル), containing archives with animation storyboards and production content. In 1983, the magazine *Animec* (アニメック) published a deluxe version dedicated to Yamato, where members of CBYL and YA are interviewed about the process of making the fan clubs and realizing Yamato fanzines. The members interviewed are Masaru Komaki, a former YA member that worked at *Animec* at the time, Asami Kushino, a CBYL member, and then YA member, Hideaki Ito, a former member of YA, and Tatsuya Nakatani, CBYL and YA member.

> Nakatani: When I was in my second year of high school, *Yamato* was broadcast, and I became a big fan with my classmates. When we visited the studio, we met Kushino-san, and when we saw the settings, we decided to publish the materials in some way to preserve them, so "Lab" was born. (Hamamatsu, *Animec* 1983, p.58, my translation[175])

The fanzines started around the end of the broadcasting, around episode twenty-five. They also paid for the rights to publish Yamato images from the studio at that time. The group also helped the studio move, and in doing so, they got original materials, such as cel works, scripts, etc. "Those cels would be famous now, but at that time, the guys helping under the stairs were cramming stuff into card boxes and going away (laughs). Now they're worth a fortune… or is it rubbish buried somewhere?(laughs)." (Hamamatsu, *Animec* 1983, p.60, my translation[176]). Because they helped move the studio, they asked which materials they could take to use in their fanzine to the studio staff. Subsequently, they would sell their fanzines at *Comiket* events.

[174] "氷川が大学在学中に会長を務めたヤマトのファンクラブ、ヤマト・アソシエイション会報誌第 1 号の表紙(77 年)。ファン同士の交流の場となって、後のアニメファンを醸成するきっかけにもなった."
[175] "中谷: 僕が、高 2 の時にヤマトが放映されまして、同級生の大矢君と小川君と大ファンになりまして、スタジオに見学に行った時、櫛野さんと知り会い、山ほどある設定を見て、これは何らかの形で資料を公開し、残そうということで"Lab"ができたんです."
[176] "あのセルは今でこそ有名ですが、当時は階段下の手伝いのおじさんたちが、カード入れに詰め込んでどこかに行ってしまったんです（笑）。今なら一財産...いや、どこかに埋もれているゴミか？という感じです (笑). "

Because of their involvement with the studio, the *Yamato Association* (Y.A.) would help the studio with the promotional strategy to release *Farewell to Space Battleship Yamato* (1978). That happened in OUT (月刊アウト), a magazine dedicated to subculture in anime that started being published in march of 1977 by Minori Shobo. In the June issue of 1977, they published a special about *Yamato*, called *A world of wonders: Yamato World* (驚異の世界: ヤマトのわあると)[177] with the contribution of the *Yamato Association*. They also contributed to the September with the second part, *Space Battleship Yamato World Part 2* (宇宙戦艦ヤマトわあると PART 2), containing interviews with Noboru Ishiguro and Yoshinobu Nishizaki. According to Fuzukumi (2017, p.12), Hikawa was also involved in writing the feature on Yamato for OUT, besides the other mentioned members.

> Ito: I started to help edit the June issue of OUT, and Mr. W started working for "Y.A." as a semi-professional editor.
> Nakatani: It was the time of the release of Yamato Part 1, and we helped with Office Academy's promotional request. (…)
> Nakatani: With the publication of anime magazines and the release of *Farewell*, we were under much pressure. But recently, I've got my head back on straight, and I'm thinking of coming back to "Y.A." to research other animations. (Hamamatsu, *Animec*, 1983, p.63, my translation[178])

The success of the two editions dedicated to Yamato also marked that commercial animation's situation was amidst dramatic change. The publishing industry recognized the existence of a segment of anime fans and began planning special features and monographs dealing with the popularity of old and new anime. In 1978, *Animage* (アニメージュ) was launched, and the July issue contained on its cover an illustration of Yamato Ship celebrating the second movie *Farewell to Space Battleship Yamato: Warriors of Love* (さらば宇宙戦艦ヤマト 愛の戦士たち,

[177] The article is signed by the contributors respectively: 協力 ㈱：アカデミー (製作協力：渡辺智子・蛭田徹・杉田健一・上杉広幸 ・YA). Yamato first publication: 月刊アウト (OUT), 昭和 52 年 6 月号 (June 1977) second publication: 月刊アウト (OUT), 昭和 52 年 9 月号 (September 1977).

[178] "伊藤: 0UT 6 月号の編集を手伝うようになりまして、W 氏がセミ作プロ編集人として"Y・A"からのきはじめたのです。中谷：ヤマトパート 1 の公開の時で、アカデミーのリクエスト作戦とか手伝ったりしましたね。(...) 中谷： アニメ雑誌が出版され、あっというまに「さらば』が公開され、的なプレッシャーがかかってね。しも、最近気をとりなおして、他のアニメも研究する"Y・A"として 復活しようかと考えています."

1978). Followed by the August issue bringing more information, including a Yamato Ship poster attached. This boom of fanzines about Yamato shows a different level of fan activity happening. Fans were starting to develop ways to connect with their favorite animations, going after thorough information about art production and character design, entering into contact with animation studios, etc. After *Animage*, several magazines dedicated to animation started appearing, such as *The Anime* (ジ・アニメ, 1979), *Animedia* (アニメディア, 1981), *My Anime* (マイアニメ, 1981), *Animec* (アニメック, 1981), among others. Before the institution of specialized magazines, manga artists and animators were the first to organize spaces dedicated to discussing and sharing art approaches, followed by more specialized fan activities. For example, during the TV broadcast of *Astro Boy*, Mushi Productions published a monthly magazine for fans, *Astro Boy Club* (鉄腕アトムクラブ). The magazine featured Astro Boy's information, besides featuring other manga artists. With the end of the series, the magazine was dissolved in 1967.

The project was reborn as a new magazine called *COM*, in 1967 published by Mushi Pro Shōji. In a sense, Tezuka wanted the magazine to feature established artists works and become a gateway for upcoming artists in the session "Gura・ Kon" (ぐら・こん, *COM*, 1968, p.205). The issue celebrating one year of the magazine's existence (1968, January 1) has a celebratory message from Tezuka on the back cover. "From this year, in the 'Gura・ Kon' section of the magazine, we have decided to have a separate section for the development of children's manga artists, differentiated from the youth manga section. The reason for this is that we want as many talented artists as possible to emerge." (Tezuka, *COM*, 1968, my translation[179]). When the magazine stopped in 1973, the manga community lost space to launch new works.

In the 1970s, due to the oil crisis or oil shock, it became difficult to start and maintain subculture magazines. At this time, because animation works were under the umbrella term *Terebi Manga*, the magazines that reported on animation were *Bouken Ō* (冒険王), *Television Land* (テレビランド), *Television Magazine* (テレビマガジン), etc. Before the seventies, another

[179] "ことしから、本誌の「ぐら・こん」の中で、「青春まんがとはっきり区別して、正しい子どもまんが作家を育てるための欄を別にもうけることにした。ひとりでも多く実力者がでてほしいためである." This issue also featured the individual manga stories, Tezuka's Phoenix (火の鳥), Ishinomori's Jun (ジュン), and "Hooten Seishun Zankoku Monogatari" (ホーテン—青春残酷物語) by Shinji Nagashima. (COM, 1968, pp.3-39). Meiji University's website also has a comment section on their *COM* collection from 1967-1973. See https://www.meiji.ac.jp/manga/yonezawa_lib/feature/feature_com_1.html (Accessed: 2022.04.10).

initiative was the *Tokyo Association of Animation Congenial Souls*[180] (東京アニメーション同好会) or in the short form *Anido* (アニドウ), an association created in 1968 by professional animators that worked in Toei Dōga, Mushi Pro, Studio Zero, A Production, and other studios. It was created to be a space for professional creation and exchange between people working in animation. The organization irregularly published a briefly mimeographed animation news called *Animation Letter* (アニメだより, 1968).

As they became more active, they launched a more extended booklet and changed its name to "FILM 1/24" (First Edition Sep. 24, 1971). It was one of the members of *Anido*, Takashi Namiki, that launched the magazine *Fantoche* (季刊ファントーシュ) in 1975, entirely dedicated to animation. *Fantoche* (no.8) was reprinted in the *Manga Shonen Monthly 2* (1977−12) due to problems in distribution. In the beginning section of the eighth issue, there is an explanation of the magazine's purpose. The magazine started because a man went to the International Animation Festival in Annecy, France. "It began with a man impressed by a French animation magazine. He said: There has never been a book on animation in Japan. I want to publish it! Help me!" (Fantoche Special Edition, 1977, p.200, my translation[181]). The man was the already mentioned Takashi Namiki, who later left the magazine. While focusing mainly on the works of animation artists, the magazine also touched on TV animation and other forms of animation to discuss the nature of the animated form.

While the fanzines about Yamato are being developed, another important fan activity is happening almost simultaneously. In 1975 the group *Labyrinth* (迷宮) was formed by manga critics Jun Aba, Teruo Harada, Yoshihiro Yonezawa, and other circles that discussed manga, science fiction, and so on. "The Labyrinth 75 met weekly to foster discussions and aimed to work as a critique group on two pillars: the launch of a manga criticism magazine and the creation of new forms of events." (Comic Market Committee, 2005, p.27, my translation[182]). As the book about Comic Market makes clear, they were part of the new generation that blossomed from initiatives like *COM magazine*. In such a scenario, they wanted to create a movement of manga

[180] The English translation is taken as it appears in *FILM1/24*, February Ed. no.12, 1974 (昭和 49). For access to the *Anido* association chronological publication, see http://www.anido.com/publication/publicationhistory/973 (Accessed: 2022.04.10)
[181] "フランスのアニメーション誌を見て、感動した男の一声ではじまりました。「日本には今までアニメの本が無かった。おれは出したい! 手伝ってくれ!」と。"
[182] "迷宮 75 は、とりあえずマンガ批評誌の創刊、 新たな形でのイベントの創出を 2 本の柱にして、批評集団として活動することを目的に、 毎週集まり、その活動内容を検討することになった."

criticism, and so they founded the magazine *Comic Critique* (漫画新批評大系 迷宮, 1975) and launched their manifesto. It was the success of their circle collaborations with other groups and the magazine response that propelled the launch of the *Comiket* or *Comike* (コミケット) event for fan productions (*dōjinshi*) and manga criticism.

The approach came from the perspective of a fan DIY event so people could sell and share their self-made productions about manga and anime shows they enjoyed. "The events content is a fanzine sale, an evolution of the fanzine sale booths that were the most fun and meaningful part of the manga conventions. It will be a fan event for fans, by fans, with a focus on fans, with no professional help or 'teachers' invited." (Comic Market Committee, 2005, p.28-29, my translation[183]). *Comike* started as a semiannual doujinshi event inaugurated in 1975[184], that in contemporary times has grown to be the largest fan convention in the world. The convention also attracted fans dressed in a fashionable style, but it was far from being called cosplay. According to the organizers, the first cosplays that appeared were from *Triton of the Sea* (1972) and *Gatchaman* (1972).

> The *Space Battleship Yamato* boom, which began around the same time, led to an increase in the number of anime fans and anime circles, and cosplay based on anime became mainstream at Comike. The *Mobile Suit Gundam* boom of 1979 was decisive in this situation and attracted media attention. At Comike 15 in September 1980, the number of cosplayers increased dramatically, and combined with the venue's small size, criticisms of cosplay gradually emerged. (Comic Market Committee, 2005, p.234, my translation[185])

[183] "内容は、漫画大会の中でもっとも楽しく、意味のあったファンジン即売ブースを発展させ人誌即売会。そこに、ファンをメインにしたイベント企入れ、プロの力を借りたり、「先生」を呼んだりしないこを明確にした、 ファンによるファンのためのファンのイベントとする."

[184] The first *Comike* event was inaugurated on 1975/12/21 with 32 circles and 700 people attending (2005, p.32). For more information on the content boots and data by year of the event, see *Comic Market Preparation Committee* (コミックマーケット準備会). (2005) 'コミックマーケット 30's ファイル—1975-2005' (*Comic Market Thirty Years File*—1975-2005). Tokyo: Comike.

[185] "同じ頃始まった「宇宙戦艦ヤマト」のブームから、アニメファ ン、アニメサークルの数が増加し、コミケットのコスプレでも、アニメを基にしたものが主流となって行きます。79 年には「機動戦士ガンダム」の大ブームが起き、この状況は決定的となり、マスコミにも注目されていきます。80 年 9 月のコミケット 15 では、コスプレイヤーが激増し、会場の狭さも相まって、コスプレに対する批判が徐々に出てきました." The *Comike 15* occurred on 1980/9/14, 340 circles, and 7000 people attended. In *Comic Market Committee* (2005), see the section "コスプレと更衣室、コミケットとコスプレ" (*Cosplay and changing rooms/ Comike and Cosplay*), p.234-239.

In the middle of the seventies, the artists and fans started to collaborate and have more direct contact, with fans visiting studios, making fan clubs, and realizing interviews. The success of such initiatives made the publishing industry realize that animation content needed a bigger space. It was the beginning of the animation press, that began to bring the backstage of productions into the spotlight. The appearance of specialized magazines resulted from artists and fans activities fomented throughout the years.

3. 4. Melodrama invades Robot Anime: Brave Raideen, and Nagahama Robot Romance Trilogy

Yamato also attracted the attention of women fans who liked manga and science fiction, especially since Leiji Matsumoto's art was already popular in manga and science fiction novels and had made its debut in animation. Then, *Brave Raideen* (勇者ライディーン, 1975-1976), animation was realized by Tohoku Shinsha, Shoeisha, Sunrise, and Asahi News Agency. Yoshitake Suzuki and others wrote the original robot anime script. The *Raideen Planning Document* is a rework made by the director Yoshiyuki Tomino[186] based on the previous work made by Suzuki and others and contains each character's identity and setting. It was planned to surpass previous animations that had worked with giant robots; to do that, it included many fantasies and occult civilizations elements. The story plot consists of the giant robot *Raideen* being powered by energy derived from the continent of Mu, and the threat of the Demon Empire awakens him. A boy named Akira Hibiki is then called to fight for the Earth.

Yoshie Kawahara, as already mentioned, started working in the animation industry at Sunrise Studios, then worked independently as a freelancer. I met her at ATAC, *Anime and Tokusatsu Archive Center* (アニメ特撮アーカイブ機構) in 2019 during one of the monthly meetings between animators and researchers. She told me that people were surprised when she first visited Sunrise Studios as a teenager. The reason was that the animation industry had targeted mainly a young male audience, so they were unaware that women were also interested in animation and science fiction works.

However, according to Yoshie Kawahara, female fans were involved in artmaking and fan activities even if the primary target public was male. "By following *Yamato*, the women learned about the deep world of 'character setting books,' 'post-recording,' and the 'production process,' which they had never known before. It was in the year after *Yamato*. The women met *Brave Raideen*." (Kawahara, 1998, p.68, my translation[187]). When *Raideen* was released, people that loved manga were also getting interested in watching animation, and it was successful, especially with the female audience.

[186] For the *Raideen* production details and design process, see Tomino, 2019, pp.46-53.
[187] "そこには、いままで知らなかった「キャラ クター設定書」やら「アフレコ」やら「製作現場」といった奥深い世界が存在したことを、女たちは「ヤマト」を追いかけることで知ったのである。そして、時は「ヤマト」の翌年である。 族愛が 女たちは「勇者ライディーン」に出会った."

One of the reasons for its success is partly because Yoshikazu Yasuhiko, who worked in *Zero Tester*, was in charge of the *Raideen* design works. The *Animage* vol.4 (12) of 1981-1982 had a special publication containing the design notes of Yoshikazu Yasuhiko and *Animage 1982 Notes* featuring some of Akino Sugio's character designs. Yasuhiko gave the design a slightly shōjo manga feel, including bright colors, more round lines, and a softer look than previous designs. However, this also brought some altercations since the producers asked the staff to change the direction to an animation that emphasized mechanical elements and dispensed with the marked colors. Amon other reasons, the internal conflict led to a change of directors, with Tadao Nagahama assuming the series.

Although Raideen's work underwent many twists and turns, it contributed to the formation of the basic format of robot animation and had an enormous impact on subsequent works. It also impacted the industry, with the success of the *Raideen* toy proto designed by Murakami Katsushi. "However, with the success of Raideen, toy companies became sponsors and developed a system of cooperation with the program producers in terms of both ideas and profits." (Onozuka, p.36, 2009, my translation[188]). The toy that succeeded was the *Raideen Chogokin* (superalloy), which could transform into Godbird form.[189]

The beautiful characters created by Yoshikazu Yasuhiko became popular, contributing significantly to the expansion of the anime program's fan base, including young women. Additionally, the hero transformation had different elements than the conventional robot animations. In the *Fade-In* scene where the hero Akira is going to board the *Raideen* robot, he says fade-in, Raideen appears as a stone statue, and Akira is sucked in as Raideen emits a bright, mysterious light. After Akira's fade-in, Raideen is transformed into a robot that adopts anthropomorphic expressions, such as moving the mouth and making sounds that match the emotional battle setting. One of the Raideen robot's main appeals was that the softer design lines matched the anthropomorphic characteristics of the movement and sounds, which were distinct from the machine-like, expressionless faces of *Mazinger Z* and *Getter Robot*, (ゲッターロボ, 1974-1975).

[188] "ところがライディーンの成功によって、玩具会社がスポンサーとなり、アイデア面でも収益面でも番組制作側と協力する体制が編みだされた. "

[189] Toys names released in 1975-1976: "ライディーン・ゴッドバード形態" (*Raideen・Godbird transformation*) and "超合金ライディーン" (*Chogokin Raideen*).

> Those who understood the "definition of mystery" gathered together to form the "Raideen Fan Club Mutron" about a year after the broadcast. In an era without media like today, this fan club, which recorded 1,000 members at its peak, was organized and managed by simply high school and University girls. (Kawahara, 1998, p.72, my translation[190]).

The fan club "Raideen Fan Club" (勇者ライディーン・ファンクラブ, RFC 会誌) published the fanzine *Mutron* (ムートロン, 16 volumes) dedicated to *Raideen*. Nowadays, the volumes are hard to collect; the remaining are collector's items[191]. The fanzine introduces the characters, episode stories, illustrations, news collections, reporting on events, and interviews with the staff that worked in the animation. In *Mutron* vol. 8, is mentioned the contribution of Hiroshi Kazama (風間, 洋), that is the alias name of Yoshie Kawahara (河原よしえ). Female fans administered the fan club that was supporting the show by promoting events, buying items, and spreading the fan base.

Despite such success, the project was too ahead of its time by attempting to incorporate mystical elements as a new approach to robot animation. As mentioned, the sponsors' demands were extreme, so they had to change *Raideen*. Tadao Nagahama assumed the series after Tomino was an established director in the sports anime genre, with his over-realism techniques of sports representation. At that point, they decided to eliminate some characters, and "(…) it had already been decided that the route would be changed 180 degrees to robot wrestling animation." (Izubuchi; Tokugi, 1982, p.71, my translation[192]). However, according to Kawahara, director Nagahama realized that *Raideen's* fan base included young women. "Nagahama was convinced that he could bring drama to 'robot manga' when he recognized the solid existence of a support base of young women, something he had never expected." (Kawahara, 1998, p.74, my translation[193]). This helped *Raideen* achieve some changes in robot animation storylines and

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[190] "こうして「神秘の定義」を解する者たちが集まって、放映終了後、約 1 年めに「ライディーンファンクラブ・ムートロン』が結成された。いまのようなメディアのない時代に、最盛期には 1000 人の会員数を記録したこのファンクラブを主催、運営したのは、もちろんただの女子高、 女子大生である."

[191] I was able to acquire the *Mutron* (ムートロン, volume 8). There is almost no trace of records about the fan club members in specialized magazines; however, on the counter page of *Mutron* vol.8, it is possible to find the names of the magazine's contributors. Members are listed as follows: (編集: 杉山りか、伊藤敏子、杉山まり 、宮崎三代子、青柳恵美、宮崎三代子、伊藤敏子), (資料提供: 風間 洋), (発行人: 杉山りか). My translation of the list members is as follows: (Editing: Rika Sugiyama, Toshiko Ito, Mari Sugiyama, Miyazaki Miyoko, Emi Aoyagi, Miyazaki Miyoko, Toshiko Ito), (The material provided by: Hiroshi Kazama), (Publisher: Rika Sugiyama).

[192] "(…) ロボット・プロレス・アニメへと路線が一八〇度変えられることはすでに 決定されていたのである."

[193] "本来ならば、彼にとってもまさかであったハイティーンの女性たちの支持層を、確固たる存在 として認識したとき、「ロボットマンガ」にもドラマをもちこめるはずだ、と長浜氏は確信したのである."

brought new popularity for the show outside the aimed scope of series[194]. In a way, *Raideen* was the antithesis of conventional robots. While it was full of new attempts and materials to break away from them, it was a tumultuous struggle between traditional formats and introducing new aesthetic elements, affecting form, fan base, and industry.

> At the time *Raideen* was released, the mainstream robot animation was based on the original stories by Go Nagai and produced by Toei Dōga, and was filled with *gekiga* touches and prioritized power, which inevitably gave it a muddy impression. In *Raideen*, Yasuhiko presented a new era of character and robot design, in which power is portrayed with elegance and sophistication, while beauty and dynamism are also emphasized. (Hikawa, 1997, p.120, my translation[195])

After the success of the latter half of *Raideen* directed by Tadao Nagahama, he then started his next project *Chodenji Robo Combattler V* (超電磁ロボ コン・バトラーV, 1976-1977). Joining the project, Saburo Yatsude is the joint pseudonym name given by Toei producers for *tokusatsu*, *super sentai series*, and *Combattler V*. According to the scriptwriter Masaki Tsuji[196], originally the *Raideen* staff was supposed to work on this project; however, they had not decided yet if it would be a *Raideen* sequel or a new work. Eventually, the project was assumed by Toei headquarters, and not Toei Dōga. Until then, Toei had been working on live-action, but the success of animation made the company decide to produce both pillars, live-action, and animation. Also, had the participation of *Soeisha* (then named Sunrise Studios). "However, the project was planned and eventually outsourced without deciding on the essential drawing and directing staff. The producer Takashi Iijima, who knew Nagahama, asked the *Raiden* staff to join the project." (Ōkubo, 2003, p.12, my translation[197]). The animation brought five robots that could be combined. For *Combattler V*, Yoshikazu Yasuhiko and Kazutaka Miyatake would work together again in the design process. Kazutaka Miyatake from Studio Nue describes in an interview with Ōkubo the

[194] Although it is outside the scope of this thesis, many female heroines and characters have been depicted in animation throughout the decades. See, Take shōbō (竹書房). (1999) 'アニメヒロイン画報—架空美少女ヒロイン四十年の歩み'(*The Pretty Character Chronicles: The History of Animation Heroines*, 1958-1999).

[195] "「ライディーン」の登場した時代、ロボットアニメの主流は永井豪原作、東映動画制作の路線で劇画タッチ満載、迫力優先で、その分どうしても泥臭い印象がつきまとっていた。「ライディーン」では、パワーを華麗さとスマートさで描き出した上 に美と躍動を感じる新時代のキャラクターとロボットのデザインを、安彦は提示したのだ."

[196] See Isawa, Yōichi (2003), chapter: 'RESPECT 辻 真先' (RESPECT Masaki Tsuji), pp.203-207.

[197] "だが、肝心な作画・演出スタッフが決まらないまま、企画のみ、最終的に外注という形になった。 そこで長浜を知るプロデューサー・飯島敬のお声掛かりから、彼ら「ライデン」のスタッフが参加することになった."

creative process of making the five robot characters and the merging mechanics that had to align for the commercialization of toys.

> The part about the five machines merging together was already presented to me when I joined the project. I believe that the manga artist Moribi Murano (who was also active as an animator and director) first drew the base. Then Yasuhiko-san cleaned up the designs we had made and sent them to Murakami-san for drawing, who corrected them, and this back-and-forth process was repeated until they were completed. (Ōkubo, 2003, p.208, my translation[198])

The process involved Toei, Sunrise, and Bandai (designer Katsuji Murakami) working closely together to create the character's mechanics and develop marketing strategies for the animation. The concept involved machines piling up and merging using magnets and electromagnetic force. Kazutaka Miyatake was also involved in this process, as he explains it to Ōkubo: "I was in charge of putting the combined patterns together into animations. The so-called *wandabas* (meaning the launching of the mechanics, etc.). The word *wandaba* comes from the march '*wandaba dada dada dada dada*…♪' in *The Return of Ultraman* (1971)." (Ōkubo, 2003, p. 208, my translation[199]). This musical rhythm "*wandaba dada dada*" got known because of the song "MAT のテーマ[200]" in *The Return of Ultraman*, and also in "TAC のワンダバ一週間[201]" composed by Toru Fuyuki. Here, Miyatake is referring to the system of showing mechanical patterns that is easy to understand by the viewer. For the quality of mechanical design to be shown in the animation, they created a scene bank that could be used to assemble the five robots. Visually, there use various elements such as shutters and latches. The cockpit (system) is also transformed at the same time. In his reflection, Miyatake reveals: "What Studio Nue brought to animation,

[198] "5 機のマシンが合体して、という部分は参加した時にもう提示されていました。最初に漫画家の村野守美(アニメーター、演出家としても活躍された)さんがベースになるものを描いていたはずです。それからこちらでデザインしたものを安彦さんが作画用にクリーンナップして、村上さんに回って修整が入ってきたものを直してそういう行ったり来たりを繰り返してできあがったんです."

[199] "で、その合体パターンを、動き=アニ メーションにまとめるのは私の役目でした。 いわゆる "ワンダバ" (メカニックの発進などを指 す。「帰ってきたウルトラマン』[71 年]の出撃マー チ「ワンダバダバダバ‥‥‥♪」が語源."

[200] See: Miyauchi, Kunio (宮内國郎). (1978) 'B8: MAT のテーマ' on 'Saundo Urutoraman' (サウンド・ウルトラマン) [LP Compilation]. Japan: King Records, vol.2.

[201] See: Fuyuki, Toru (蒔田, 尚昊), Aoi Masahiko (葵 まさひこ). (2017) "TAC のワンダバ一週間" on 'ウルトラマン A オリジナル BGM アーカイヴス (ウルトラマン A 45th-anniversary music collection; disc-1)' [CD]. Japan: Nippon Columbia.

either as a format or as an epoch, was *reality*. As science fiction fans, we were not satisfied with the mecha of previous animations." (Ōkubo, 2003, p.208, my translation[202]).

The series was followed by *Super Electromagnetic Machine Voltes V* (超電磁マシーンボルテス V, 1977- 1978) and *Tōshō Daimos* (闘将ダイモス, 1978-1979). The three animations would be known as the *Nagahama Robot Romance Trilogy*. In the sequel, *Machine Voltes V*, the design was made with the sponsor to adjust the transformation of the robots more effectively and, in doing so, make it easier to create toys. "Despite calling it a *crow tengu*, Tadao Nagahama, and his staff worked hard to make the new giant robot *Voltes V* look attractive as an alternative to the *Combattler V*. This is a theme that continues in the current *Super Sentai* series to this day." (Isawa, 2003, p.114, my translation[203]). Adding to the melodramatic worldview, Nagahama incorporated an anti-war theme within the complexity of human drama. For *Tōshō Daimos,* they had to combine the elements of the previous seasons but also provide some new elements. One person essential to this innovative approach was the producer Takeyuki Suzuki.

> Producer Suzuki, who had worked on live-action tokusatsu heroes for Toei films such as *Accumizer 3* (1975), participated in the production with innovative ideas that broke down the barriers between animation and live-action. He introduced the methodology and style he had learned there for the first time to television animation and breathed new life into this production and the animation genre itself. (Isawa, 2003, p.115, my translation[204])

Producer Suzuki invited Kazutoshi Takahashi, a swordfighter of the Ōno Kenyukai (大野剣友会), which is well known for working in Toei's transforming pose for tokusatsu. To incorporate sword fighting in *Tōshō Daimos*, Kazutoshi Takahashi showed the sword fighting movements to the animation staff, which resulted in the creation of unique action sequences. Takahashi is also the sword fighter responsible for the transformation pose in *Kamen Rider*. "The

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[202] "スタジオぬえがアニメーションに持ち込んだものフォーマットというかエポックというか、それは"リアリティ"だったと思っています。ひとりの SF ファンとして見た時に、私達はそれまでのアニメーションのメカでは満足できなかったところがありました."

[203] "カラス天狗と呼びながらも、長浜忠夫総監督をはじめスタッフは、コン・バトラーV に替わる新しい、この巨 大ロボット=ボルテス V を如何に格好よく且つ魅 力的に見せるかに腐心した。この辺りは現在の、『スーパー戦隊』シリーズに連綿と踏襲されている."

[204] "東映作品では「アクマイザー3」(75 年)などの実写特撮ヒーローものを手懸けていた鈴木プロデューサーはアニメーションと実写の壁を取り払った、斬新な発想で制作に参画。そこで学んだ方法論及びスタイルを初めてテレビアニメーションに導入して、本作のみならずアニメーションというジャンル自体に新風を吹き込んだ."

transformation pose was the same as the killing pose in *Jūdō Icchokusen* with Tsuyoshi Sasaki and was invented by Kazutoshi Takahashi of the Ōno Kenyukai. Such transformation poses became an indispensable part of the transformation heroes." (Aeon; Take shōbō, 1995, p.85, my translation[205]). As such, in *Tōshō Daimos*, the action scenes mixed with human drama become a success for both children and adults.

Takeyuki Suzuki was also the producer of *Future Robot Daltanious* (未来ロボ ダルタニアス, 1979-1980) by Toei and Sunrise, and other animation projects. "In later years, Suzuki applied the animation know-how he had acquired during this period to live-action productions such as the *Super Sentai* series. He also succeeded in breathing new life into the series." (Isawa, 2003, p.115, my translation[206]). For example, Suzuki produced the *super sentai* series *Chōshinsei Flashman* (超新星フラッシュマン, 1986-1987). Flashman's story is that five children were kidnapped as babies and raised on an alien planet by the enemy that would attack Earth to do experiments with transmutation. The five members ultimate goal is to find their actual parents. "As a digression, this film is also the first in which the heroes use multiple giant robots." (Aeon; Take shōbō, 1995, p.180, my translation[207]). The robots in *Flashman* are combined to form the super robot *Flash King*, and then the five members enter the cockpit. In the transformation of *Flashman*, the shut goggles open and close to reveal the hero's face, which was an element common portrayed in animation. In this way, the legacy of the Nagahama robot series also invaded the *super sentai* genre and new elements were incorporated.

[205] "その変身ポーズは、 佐々木剛が出演した「柔道一直線」での殺陣そのもので、大野剣友会の高橋一俊が考案したものだ。このような変身ポーズ は、変身ヒーローには不可欠なものとなった."
[206] "後年、鈴木プロデューサーは、この時に培ったアニメーションのノウハウを、今度は「スーパー戦 隊シリーズ」などの実写作品に投入。やはり新風 を吹き込むことに成功している."
[207] "余談ながら、ヒーローの乗る巨大ロボが複数登場するのも、本作品からである."

3.4.1 Interview with artist Yoshie Kawahara

Interview with artists and author Yoshie Kawahara (河原 よしえ)

Date: Sunday, 26 June 2022

Place: Aoyagi Restaurant, in front of Kami-Igusa Station on the Seibu Shinjuku Line, where Sunrise studios used to be. The restaurant was also a kind of 'company cafeteria' for Sunrise staff[208].

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Angela: Thank you so much for your time today. It was exciting to see the Sunrise birthplace. First, I would like to ask how you got involved with animation and started working at Sunrise?

Kawahara: *Astro Boy* started on TV right when I was six years old, so of course, I watched, but my favorite as a child was *Eight Man* (8 マン). In Eight-Man, you see a human transform into a robot. I was more interested in the science fiction type of animation that was around at the time, so I guess I was more interested in, let's see, the *Yusei Shōnen Poppy* (遊星少年パピイ, 1965-1966), *Uchū Shōnen Soran* (宇宙少年ソラン, 1965-1967), and *Uchū Patrol Hopper* (宇宙パトロールホッパ, 1965). So, I watched all the cartoons Toei made aimed at boys. I was in the third year of junior high school when *Mazinger Z* (1972) started, and *Devilman* (1972) started. I wanted to be a manga artist, so I knew Go Nagai (永井, 豪) and Leiji Matsumoto (松本, 零士) as manga artists. I was told they would do an anime, so I started watching it. I loved watching *Mazinger Z* and *Devilman*, and I watched the reruns nine times. So, when I was just a sophomore in high school, I watched *Space Battleship Yamato* (1974). It just so happened that I said, "I like Yamato, I like Yamato," but all the girls around me didn't watch anime, and even fewer combat themes.

Strangely enough, when I was drawing manga and other things, I had friends in that area. Then I heard that a company was making an animation of *Yamato*, just around the corner from my high school. We would now call it an animation studio, but it is a subcontractor studio. So, for the first time, from there, I brought this thing called a character list that my friend had gotten, and he

[208] Conducted originally in Japanese language. Transcriptions from audio recordings made by Mr. Taku Kawai and Ms. Mie Kawai. Translations to the English language by the author.

showed me the character list. He said, “This is the kind of thing you see in animation.” It was a drawing of the main characters. So, I wanted to have it on my hands; I wanted to see it. So, I was using my network of high school students to put up such materials, and it was around this time that I came across *Brave Raideen* (1975). I have always loved ancient Egypt since I was a child. So, my friend called me and said, “Hey, there's a cartoon on TV right now with a character that looks like it’s from Egypt.” He told me to turn on the TV, and when I did, it was the first episode of *Raideen*.

(Pointing to a book on the table) I wrote about this in the book, but I brought it up because, in those days, many characters like *Mazinger Z* or Go Nagai were relatively strong and sweaty. However, Yoshikazu Yasuhiko, who designed *Raideen* characters, made the characters fall between *Shōjo* (Girls) and *Shōnen* (Boys) manga. He drew a character with a soy sauce face, which was unusual at the time. People were attracted by his drawings and wanted to follow that style.

Angela: For both boys and girls?

Kawahara: It’s like it won the hearts of girls. I also liked Egypt; in that context, it had the robot and Egypt connection, but I was also good-looking. It was the sense of the people doing it at the time, for example, the bow, even though it’s a robot. Not missiles. When he shoots the bow, he doesn’t do it deliberately; he moves slowly. I wouldn’t say it was like Kabuki, but they were cool like that. Yes, the fingers are not just extended. When he flies, he doesn't fly like Superman. I was fascinated by that. And then I saw *Raideen*, and I thought it was good, and just a little while later, a friend of mine told me that the company that made it seemed to be near my school. It was in Kami-Igusa. I went to a school in Fujimidai, a little north of here. It was really within walking distance. He said, “You can walk there,” I said, “Well, I've got to try it.” At that time, they were still working on episode 9 of *Raideen*; they were still doing “satsudashi” (さつだし), which I still remember very well, so they had only done about 3 or 4 episodes on TV. That’s about the time I went to their studio.

Angela: So, what is this “satsudashi”?

Kawahara: The term “satsudashi” is used in the animation industry; it refers to combining the finished pictures, backgrounds, and other items and handing them over to the film company that will make the film. The production director does that. How many seconds of this should be taken? The director specifies the backgrounds, how many seconds to use them, and so on, and then brings them to the film crew. The process of preparing for the actual work is called “satsudashi.” So, when they were shooting, there were still cels and backgrounds there before the shooting. When I went there, there was a cel of episode 9, and it was on the producer’s desk. So now that I think about it, if episode 9 were to be shot, it would typically be two or three months before it would air.

Angela: While the episode aired on TV, they had about three or four episodes in progress?

Kawahara: They were working on the 9th episode, so they were working around three to four episodes ahead. Also, after filming, much work is still needed, such as adding sound and other things. It would take at least a month to complete it, so whether the schedule was good or bad was another matter. So, even though they were doing one film a week at the time, that meant four films a month, so even if you consider it a month, it would still be much work. So, there are robots on the enemy side that I've never seen before, and drawings there. Like, what is this?

Angela: So, it was inside information that only a few people knew.

Kawahara: That’s about the extent of it. At that time, my friends, who were also anime fans who became friends through their love of manga, as I mentioned before, made copies of a simple coterie magazine (*dōjinshi*) which at that time was a copy magazine. We would go to a stationery store, fold them in half, and staple them together. That was the kind of thing we were making. So, we took advantage of that and lied and said, “We are running an animation research group. Please let us observe.” It was a lie. But when I told them that, they would say something like, “Oh, really? You're a high school student, and you’re watching this stuff?” But when I said so, they kind of let me in, and I said, “We want to make something like this, not that kind of coterie magazine.” They said, “Oh, you can go ahead and take the copy. You can take it from there,” I would make a photocopy of it right then and there, in its raw form. Even back then, the company had a copy

machine. Although photocopiers were still in use in the old days, I would ask the person I wanted to make a photocopy of it on the spot. Also, in those days, the celluloid became trash after they were used, so they would say, “You can take them if you want them.”

Angela: I was surprised when I read that.

Kawahara: That’s because it is industrial waste. You have to pay to have it taken away. So, from the company’s point of view, people should take them instead of just wasting away. It’s a win-win situation. Director Tomino Yoshiyuki was there. He said, “What, you like it” “ You like this kind of thing?” and then he said, “Well, I’ll give you this,” and he gave me a niece piece of celluloid that he usually wouldn't have given me. Banzai! Then, a person in charge of publicity at the company at the time saw it and said, “You like it, don’t you?” He said, “Well, if you want, you can stop by on Saturday before school?” I was asked if I wanted to work part-time. I wondered what it was all about, and then he said, “It's the work of separating the necessary celluloid from the unnecessary ones.” He said, “You are watching the show. So, there are times when you look at it and realize that you have seen his picture before, right?” Oh yes, I said. He proceeds, “Those are pictures that could be used again, so you must sort through them. So, you also know the parts that won’t appear anymore.” For example, once a robot on the enemy side is defeated, it will never appear again. We don’t need that kind of thing. He says, “I don’t need those, so please separate them. You can take the ones that we don’t use anymore with you. The ones in the big bag (called a cut bag); you will write down what kind of picture it is and put it on this shelf.” This is what later was called a cel bank.

Angela: It was like image storage.

Kawahara: That’s right. I had to organize the bank, and in exchange, I could take home any cel they didn't need. I started doing it part-time. But now and in the past, there was always a shortage of workers. They said, “I have to paint this one cel by 5:00 today,” and then people asked me, “You are drawing comics, aren’t you?” Like just tracing the lines. “If it’s like this, I’m sure you can draw a beautiful line.” He would say, “Drawn me a little of this,” or “You have held a brush before, haven’t you?” and then I said, “Yes.” I was having fun and happy. So, I learned

somehow the work, and before I knew it, they said, “I heard you are graduating from High school; why don’t you come work here?” There was no exam or anything like that.

Angela: The next question I want to ask you is, you wrote the name Kazama-san on this member list for *Raideen dōjinshi* magazine (*Mutron Dōjinshi*, ムートロン). Do you remember it? I would like to hear about the fan club and the created activities. (See Figure 9)

Figure 9 Mutron Dōjinshi, (ムートロン) vol.8 details, author collection

Kawahara: Yes, this magazine is called *Mutron*, it says here (points to the magazine), where it says the editorial, Rika Sugiyama (杉山，リカ) and Mari (マリ), these two were twins and they liked *Raideen* when they were in high school, and they came to visit Sunrise company even though *Raideen* was already over by then, just like my old days, they said: “We like *Raideen* very much.” At the time, I was already working on the next film. There were 52 episodes of *Raideen*, the first and second half, but the director of the first 26 episodes, the 27th episodes, and beyond was different. The director of the second half was a man who cared about his fans and welcomed them when they came to his office. I knew him well, and the girls came to visit him. He asked me if I would listen to them. I talked to them and heard that they wanted to start a fan club. Unlike today, copyrights were not so strict, so we said we would cooperate with them. They didn’t know anything

about anime; they were just fans. So, if they were going to start a fan club, I said I would be happy to provide them with materials and advice. I was named Honorary Vice President. The word "honorary" means I don't do the actual work, but I watch from the side and complain.

Mari Sugiyama and Rika-chan were working on this fan club book. I think the difference between boys and girls at that time is that when girls like something, they all want to get together and work hard. To get things going, I felt that I had to be good to the people at the company and not cause trouble or damage the work I loved. There should be no mistakes in doing a fan club. Every time something happened, they would go to the place that held the rights and ask, "I want to do this; can we do that?"

Thanks to them, we were able to hold screenings, and they were fans, but they had to pay for it, and the rights company would rent the film, and they had to go and get a license for the projector, which was a camera that projected the film. We went to obtain the permit and held screenings. Some laws and regulations apply to venues that can accommodate a certain number of people and can be a hassle. We had to go to the city office, etc., get permission, and then they did it all. It was like a real job. But they started as a high school student, then went to college, and thanks to all that work, they had 1000 members in the fan club. However, back then, if you had more than 1,000 members, you were called a corporation, which was different from just a fan club, and you had to pay taxes. It was a hassle. So, we decided not to do that.

We set a limit of 1,000 as the upper limit. And the other great thing is that we only charged what the copy cost us. We have to assume that there is no profit for us. When making the first copy of the paper, I would only get the cost of the paper from the members, say 500 yen. As the number of copies increased, there were different prices, let's say 300 yen. But if I make this into income, I have to pay taxes and so on. We had to return the money, but you can't just replace the money. So, we asked the members what they wanted: *something original*. We asked the rights company, "Since we got these results, we would like to make an original poster," they would pay the company the money for the copyright rights.

Angela: So, what did you do?

Kawahara: I took a poster of Yasuhiko-san! It's a little bit of a *Gundam* story. I went to Yasuhiko's house and asked if I could have it. (laughs). Okay. I said, "In exchange, a penny or ten

yen per person." However, Yasuhiko said: "If you bring it, I'll tear it right before you. Let's say I'm going to do it because it's free, I will draw it, and then you can go home. A big one." We had to do it right!

Angela: The fan club was only for women?

Kawahara: No; it just happened that the chairpersons who started it were girls. There were always more girls on the staff, but that doesn't mean that there were no boys. Maybe Mr. Hikawa-san could have been there, but I'm not sure. Mr. Hikawa had joined the *Yamato* fan club. He was a member of many fan clubs.

Angela: My next question is a little bit connected to my research, but since we met at ATAC saloon, I'm sure you know that there has been a lot of research and preservation of anime and tokusatsu, and there is a growing awareness, especially among artists, about the world of anime and tokusatsu and their connections. What do you think about these recent movements?

Kawahara: Well, do you know how creative the Japanese are regarding so-called films? There has always been an inevitable overlap in the number of people who like to watch movies. Of course, individuals have differences, but people who watched tokusatsu in their childhood also watched anime. In this way, the fans overlap. The term '濃い人たち' (meaning intense or passionate people) has become a popular one, especially among those who have started their activities, including *dōjinshi* activities, to show that they like something, so there is a flow of such people in Japan. Of course, some fans are entirely detached. Tokusatsu and anime are two different things, but many people overlap, especially those on the receiving end, those who not only create but also receive programs and such, and see films and think, "I like it."

Since these people are not making their stuff, they are not making films, so they try their best to get what they like around them. In short, they try to increase the number of their friends. So, a certain number of people like Mr. Hikawa are okay with tokusatsu and anime. However, it is difficult to say how large the number is. Another thing is that in the past, people of that generation, like Director Tomino, were not interested in animation; they wanted to make movies.

But it was difficult to get into film as a career. So, many people came to animation because they had no choice, even though they wanted to work in film.

Many people who started out wanting to enter the world of film as a first step were from a generation slightly older than me. That's one of the reasons why in Japan, *Eizō* (visual images) is a genre of movies in Japan, and Tokusatsu is one of the genres of movies. Tokusatsu is used as a part of a larger film. The other is that the moving pictures in animation are connected to the comic books in magazines. So, there is a difference in which direction they came from. There are two streams, I think. I came in from the comic side. So, there is a difference in the direction of artists between those who came from video and those who came from still pictures. The people on the receiving end connected them, as I mentioned earlier.

I think ATAC came into existence because of the people receiving, as I said before, people who wanted to make friends. ATAC is finally in an era where these people are making their voices heard, and the world is recognizing it, thanks in particular to Mr. Anno. I am sorry that a part of me says, "*If Anno-san makes a move, the world will see it*," and I was along for the ride. But I also liked *Raideen* as a practical thing already. I was also working beyond that. I have a lot of material at home. There are many celluloid films that I liked that were given to me. However, what I'm going to do with this? I talked with Hikawa Ryūsuke and others about how it would be great if we could build a museum or something like that where we could leave them. Then, they thought it might be possible to do something like that, so they made a place for it.

That was a *Banzai* already! After I pass away, I would like to count on people. I have many things I want to leave behind, including the know-how I had while doing the work. Sunrise, too; as I said before, when the company changes, it inevitably cuts back on the old stuff. We want to preserve them in some form so that people like you can continue to do research on them in the future. And people who are going to make Animation and Tokusatsu in the future will use it as material, and they will say, "This kind of thing exists based on this kind of history," because there is a big difference between doing it with an understanding and doing it without knowledge. I'm collaborating for a straightforward reason. And as I said, I left this job before digitalization, so I can talk about what happened before digitalization. But of course, those people, myself included, are all getting older now, so I think *we have to do something within these last ten years*.

3.5. Aesthetic changes in Zambot 3

Super Machine Zambot 3 (無敵超人ザンボット 3) was launched in 1977 as the first animation of Sunrise. Former employees of Mushi Productions established Sunrise studio. It had its own planning company, Soeisha, with further capital participation from Tohoku Shinsha. Sunrise Studio was established as its animation production site. "This was because the founders, Moshimoto, Itō, Yamaura, Shibue, and Iwasaki, did not have the financial resources." (Tomino, 2019, p.301, my translation[209]). After the collapse of Mushi Pro, many producers and animators had to start again and discover how to make a living. Tomino also describes that at Soeisha, he and the staff that worked on *Zero Tester* were paid meager wages. Additionally, at this time, Tatsuo Yoshida passed away (1977/09), which led to the artist's exodus and reorganization of Tatsunoko Productions. In this situation, they hired new artists, such as Mamoru Oshii, Mizuho Nishikubo, Hidehito Ueda, and Koichi Mashimo, to work in the studio for some time.

Zambot 3 was directed by Yoshiyuki Tomino, written by Yoshitake Suzuki, and Yoshikazu Yasuhiko made the characters designs. Besides them, the working staff also included other important names. "The art direction was by Mitsuki Nakamura, a member of the Tatsunoko group; the animation was outsourced with the participation of Yoshinori Kanada, a Toei-colored artist, reflecting the changing map of the industry and the hybrid style of 'Mushi Pro + Tatsunoko + Toei.'" (Hikawa, 1997, p.9, my translation[210]). This hybrid combination of aesthetic lineages made *Zambot 3* an essential work of super robot animation that was already transitioning to a different style.

The story was based at the end of the Edo era, when the Jin family moved to Earth, scaping from the Gaizoku, which had destroyed their home planet Viar. After hundred years of living peacefully on Earth, the Jin family has to fight the invasion by the Gaizoku, which launches monsters called *mecha boost* (monsters with mechanical parts) to attack in each episode. The connection between the Edo period and the robots of the Jin family is highlighted in the Japanese

[209] "創業者の岸本、伊藤、山浦、渋江、岩崎といったスタッフたちに資金力がなかったからである." The mentioned founders full name respectively: 岸本吉功 (Moshimoto, Yoshinari), 伊藤昌典 (Itō, Masanori), 山浦栄二 (Yamaura, Eiji)、渋江靖夫 (Shibue, Yasuo), 岩崎正美 (Iwasaki, Masami).

[210] "美術はタツノコ系の中村光毅、作画外注で東映色の濃い金田伊功が参加、業界地図変動を反 映し、「虫プロ+タツノコ+東映」というハイブリッドな作風となった."

elements that were integrated into the robot design. "*Zambot* weapons are also treated in the Japanese style; the Japanese sword (Zambot Cutter), the spear (Zambot Blow), and the ten-way shuriken (Zambot Buster). Only the Zambot Grapple, often mistaken for a ten-handed weapon, is an ancient Okinawan weapon called a *sai*." (Hikawa, 1997, p.127, my translation[211]). The idea to bring swords and armor more fantastically and less scientifically appeared in *Great Mazinger* (1975-1975). However, *Zambot 3* is the first animation incorporating Japanese elements in the weapons and robot style. For example, in the first two episodes, the robot face design is reminiscent of the *Raideen* robot. In episode 3, named *Zambot 3 Appears* (ザンボット 3 出現), for the final transformation, the robot's forehead receives a crescent moon reminiscent of Date Masamune's armor.

> The head is based on an ancient Japanese helmet. The crescent moon decoration on the forehead may be from Date Masamune. This work was initially planned as a robot animation for the Sengoku period so that it may be a vestige of that. The torso is also reminiscent of a *Jinbaori* (Japanese battle surcoat). (Hikawa, 1997, p.126, my translation[212])

Besides the Japanese elements, the robot Zambot Ace was the first to use a gun as a weapon, simulating a western movie type of fight. This combination of different features meant that the mechanical designers had to work hard to create a smooth mixture. "Until now, there were only two types of giant robots: transforming robots and combining robots. Zambo Ace transforms into a fighter and combines with two other mecha to become a giant robot. This two-stage format, which is now commonplace, was originated by *Zambot*." (Hikawa, 1997, p.127, my translation[213]). In a sense, the Super Robot era of animation was primarily marked by the mechanical transformation (*henshin*) or the combination (*gatai*) of its mechanical elements. The idea of the

[211] "ザンボットの武器も、日本刀 (ザンボット・カッター)、槍(ザンボット・ブロー)、十方手裏剣(ザンボット・バスター)といった和風の処理がされている。よく十手と間違えられるザンボット・グラップだけは「サイ」という沖縄古来の武具である."

[212] "頭部は日本古来の兜をモチーフにしている。額の三日月の装飾は伊達正宗のもの だろうか。もともと本作品は戦国時代のロボットアニメとして企画されたとのことなので、その名残だろう。胴体も陣羽織を連想させる." The Sengoku period is also called the Warring States period in Japanese history, dating approx. 1467-1568.

[213] "それまでの巨大ロボットは、変形ロボットと合体ロボットに二種類しか なかった。ザンボ・エースは戦闘機に変形し、なおかつ他の二台のメカと合体して大型ロボットになる。今ではありふれた設定だが、この二段構えの形式はザンボットが始祖なのである."

two-step transformation and combination of robots will be common in the so-called *Real Robot* genre. Additionally, at this time, the insertion of giant robots transformation and combinations is happening in the *Super Sentai* series, which also helped create this innovative movement in animation.

In Hikawa's analysis, the success of *Zambot 3* was followed by *Invincible Steel Man Daiturn 3* (無敵鋼人ダイターン 3, 1978-1979), and then *Mobile Suit Gundam* (機動戦士ガンダム, 1979-1980), building on Zambot 3 achievements and they were produced with a higher degree of freedom. "These three streams and the introduction of giant robots into tokusatsu productions can be said to have maintained the vitality of giant robot animation up to the present day." (Hikawa, 1997, p.132, my translation[214]). There was already familiar ground in technical composition and the know-how of a DIY approach to both fields. Still, the Giant Robot theme crossed and helped create similarities and differences between animation and tokusatsu dealing with this theme. *Zambot 3* also brought multiple characters to the Jin Family, designed with round features and the warm quality of Yasuhiko's designs. The warmth of the characters played against the serious themes of war, and especially in episode 16, with the explosion of human bombs and the genocide of humans, the emotional *pathos* captured the viewer. However, one unique element of this animation is the contributions of Yoshinori Kanada's style.

[214]この 3 本の流れと特撮作品への巨大ロボ投入により、現在に至る巨大ロボットアニメの命脈が保たれたとも言える."

3.6. Yoshinori Kanada's explosive legacy

According to an NHK special[215] broadcasted after Yoshinori Kanada passed away, his father was a pilot in the Self-Defense Force. For this reason, Kanada's started liking planes and mechanisms. Yoshinori Kanada's (1952-2009) debut was in Toei Dōga with the animation *Mahō no Mako-chan* (魔法のマコちゃん, 1970). After that, he joined Studio No.1, founded by Takuo Noda (野田, 卓雄). He worked on many animations, such as *Space Battleship Yamato* (1974), *Getter Robo G* (1975), *UFO Robot Grendizer* (ＵＦＯロボ グレンダイザー, 1975), and then went on to work in *Wakusei Robo Danguard Ace* (惑星ロボ ダンガードA, 1977). In a sense, in the first half of the seventies, he mainly worked for Noda's productions.

After that, he joined Studio Z, which was established by Shingo Araki (荒木, 伸吾) and his colleagues. The first generation[216] of the studio was made by Masaki Abe, Shingo Araki, Kazuo Tomizawa, Shinya Sadamitsu, and Yoshinori Kanada. In 1976, Hajime Kamegaki, Hideyuki Motohashi, Satoshi Hirayama, Kazuo Tomizawa, Masayuki Uchiyama, and others[217] joined Studio Z, and at that time, Kanada was part of the senior team. "They made their first animation by creating the opening sequence. One of these was *Voltes V*, which established a connection with Sunrise Japan." (Hikawa, 1997, p.142, my translation[218]). After that, Studio Z also started working on *Zambot 3* (1977), and Kanada's debut as an animation director was in the super robot anime *Divine Demon-Dragon Gaiking* (大空魔竜ガイキング, 1976-1977) for episode 34 and the last episode. Kanada worked closely with Takuo Noda in *Getter Robo G* and *Gaiking*. "The combination with Takuo Noda, a strong and sturdy animation director who excelled in powerful

[215] (MAG・Net Special: Yoshinori Kanada, revolutionary child of animation) 'ＭＡＧ・ネットスペシャル アニメの革命児 金田伊功' (2010) One episode. NHK: 14 August (Sat.) 23:00-24:00 (BS2), 23 August (Mon.) 23:15-24:15 (BS hi). Cast and appearances: 庵野秀明 (Anno Hideaki), 越智一裕 (Ochi Kazuhiro), 小林治 (Kobayashi Osamu), 貞光紳也 (Sadamitsu Shinya), 友永和秀 (Tomonaga Kazuhide), 野田卓雄 (Noda Takuo), 氷川竜介 (Hikawa Ryūsuke), 村上隆 (Murakami Takashi). News article about the Kanada's Special, see: https://animeanime.jp/article/2010/08/01/6773 html (Accessed 2022.04.10)

[216] See *Animage*, 1981 (8).'Young lions of Studio Z5!' (スタジオ Z5 の若き獅子たち!), pp.88-90. In this edition, they introduce the history of Studio Z. In the first phase, the members (p.89) are respectively listed as 阿部正巳 (Abe Masaki), 荒木伸吾 (Araki, Shingo), 布告文 (unknown), 富沢和雄 (Tomizawa Kazuo), 貞光紳也 (Sadamitsu Shinya), 金田伊功 (Kanada Yoshinori).

[217] To avoid confusion of name readings, the western version is followed here by the original name, respectively: Hajime Kamegaki (亀垣 一), Hideyuki Motohashi (本橋 秀之), Satoshi Hirayama (平山 智), Kazuo Tomizawa (冨沢 和雄), Masayuki Uchiyama (内山 正幸), retrieved from *Animage*, 1981(8), p.89.

[218] "オープニングの作画で旗あげをしたのだった。その一本が「ボルテス V」で、これで日本サンライズとの縁ができる."

drawings, made the early works of Kaneda's animation an ace in the action genre that continued to amaze animation fans." (Kanada, 1982, p.44, my translation[219]). The distinctive style of Kanada started to get noticed and admired by both animators and fans. One of Kanada's colleague, Hajime Kamegaki expressed the admiration he felt. "Kamegaki says the work of Yoshinori Kanada still inspires him. He says: 'I want to learn the timing contrast between getting close to the movement and when to let it go. The screen's power is still not as strong as I would like it to be. " (Animage, 1981, p.89, my translation[220]).

Kanada's style was consistent with rough touches that resemble the *gekiga* style. Flowing lines create deformations through movement, which makes them move with liveliness. In Figure 10, at the right, the gekiga style is apparent in the harsh lines, and in the left frame, the light and softness increase as the movement ensues. Another critical point is that he manipulated the movement using second cues, like rough, rounded lines and scattering of explosions, to provide robust realism fueled with *pathos*. On *Zambot 3*, the beautiful designs made by Yasuhiko were made fully alive by Kanada's approach to movement pull and interval, which created a dynamic environment. The animation was dynamic, subtle, and extremely impressive because the fluid cuts were made with unique timing.

Figure 10 Frames from Ep. 22: Butcher's last day in Zambot 3[221]

[219] "力強い絵を得意とする骨太の野田卓雄作画監督とのコンビもよく、金田アニメの初期作品は、アクション編のエースとして、アニメファンを驚かせ続けたのだ."

[220] "亀垣氏においては、いまもって金田伊功氏の仕事ぶりを自分の 励みにしていると話す。「動きをつめるところ離すところ、そのタイミングのとりかたコントラストのうまさを学びたい。画面の迫力はまだまだおよびません」と."

[221] Still images from: '*Muteki Chōjin Zanbotto 3*'. (2018) Yoshiyuki Tomino. Japan: Happinet, (9h29min) (Blu-ray box).

In the 70s and 80s, Kanada developed a personal style of manipulating movement, sometimes ignoring the storyboards if the scene required an animator's input. By bringing his authorship mark, Kanada brought the concept of letting the animator's talent shine instead of being uniformed into anonymity. The key-animators role in contemporary animation is to create a personalized aesthetic mark in different scenes, often using individual specialties if the scene requires it. The concept of personal animator style became more apparent in the industry within Kanada's approach to animation. His approach was not about increasing the number of frames per second for a naturalized realism, nor was it explicitly reaching for steadily limited animation. Instead, his approach was about experimenting with movement, poses, and timing.

The Kanada Special broadcasted by NHK showed that he used rulers with different shapes to break the curves and figures that he drew previously. In this way, he would distort the lines and shapes to create unexpected patterns for movement, often interrupting or skipping lines in-between frames. The feeling on the screen is of the artist's hand, a fragment of a drawing, an extension of a line that seems alive as it moves graphically, distorting or becoming more natural than a realistic image could achieve. The interrupted lines also created a feeling of urgent movement, giving emotional expression to the scene, which was added by the bold use of color and lighting. In the late 70s and early 80s, robot animation was characterized by a feeling of *liquid fire*, where the interaction between color, line, and light would make the explosions, and the fire becomes liquid, giving a sense of liveliness. Kanada contributed to the blossoming of effect animation, expanding the range of emotional weight and movement without being constrained by the number of frames. In a sense, it is as if Kanada understood that the interstices between the frames gave room for infinite possibilities of composition.

Hikawa has been collecting Kanada's original drawings and also film rolls. In the already mentioned NHK Special, Hikawa holds the original film for the animation *Galaxy Cyclone Braiger* (銀河旋風ブライガー, 1981) and explains the use of time deformation realized by Kanada. To put it simply, in animation, there are styles of animation called on 1s, 2s, and 3s, which means the time an image is held on the screen.[222] So, in anime, the drawing is usually changed every 3s because it is animated on the three frames rule. However, in the opening of *Braiger*, Kanada's timing does not obey conventional timing per frame rules. Hikawa shows that in one section of the

[222] For example, if you animate on 1s, you have 24 drawings. If you animate on 2s, one drawing holds time for 2s, which means you will have 12 drawings, and on 3s, you will have subsequently 8 drawings.

opening, the frame holds 2s, 2s,1s, 2s, 1s, 1s, 2s, and 1s. Doing so creates a unique feeling of being in the middle of a scene since the speed is alternated in different flows.

Kanada also worked in *Galaxy Express 999* (銀河鉄道 999, 1979) and *Harmagedon: Genma Taisen* (幻魔大戦,1983). Specifically, in *Genma Taisen*, Kanada created *fire dragons* and used the power of the rays of light that cut through space with round or cross shapes. In Figure 11, the characteristics of explosions that come alive in the round, and lateral shapes of white, orange, and red variations of fire and movement, are seen in *Arcadia of My Youth* (わが青春のアルカディア, 1982). "Mr. Kanada first attracted attention as *Exploding Kanada* because the image of a swelling explosion gave him an unprecedented sense of strength and power." (Kanada, 1982, p. 48, my translation[223]). The *Exploding Kanada* quality refers to the power of the second cues in the animated explosion that is worked within the complex timing variation.

Figure 11 Yoshinori Kanada's explosion style in Arcadia of My Youth (1982)[224]

Contemporary artist Takashi Murakami that started the *Superflat* movement, was inspired by Kanada's approach to composition and movement. Murakami affirms that his sculptures

[223] "金田氏は、最初「爆発の金田」として、注目をあびたふくれあがる爆発のイメージが、それまでにない力強さとパワー を感じさせたからだ."

[224] Still-images from: ***Arcadia of My Youth***. 2013. Tomoharu Katsumata (dir.) Japan: Toei Co., (2h10min) (Blu-ray).

Hiropon [225] (1997) and *My Lonesome Cowboy* [226] (2001) were inspired by the Kanada style of the explosion; however, Murakami wanted to create a 3D expression of it. In the same interview for the Kanada Special of NHK, he describes Kanada as a choreographer because of the composition ability he holds over his animated characters as they move between the frames. In his book *Superflat* (2000), Murakami explains the relationship between the eccentric painters and arrives at Kanada's work. "To think about *super flatness* is to think about Yoshinori Kanada. In tracing the sources of his lines, one passes through Horst Janssen, Ito Jakuchu, and Kano Sansetsu of the 'lineage of eccentrics,' Damien Hirst, Gerhard Richter, and Katsuhiro Otomo." (Murakami, 2000, p.115). In fact, in the section of the same book where he explores the visual aspects of *Superflat* (pp.28-29), he poses animated images from Kanada in *Galaxy Express 999*, and by the side, Katsushika Hokusai's work *Thirty-six Views of Mt. Fuji* (around 1831).

In a sense, Murakami wanted to fill the gap between art movements and create a bridge where popular culture could be discussed in Art History. I agree when Murakami says that despite Kanada's enormous force in establishing many animated aesthetic styles, he remains largely unknown to the academic field. However, instead of placing him in a direct lineage of flat art, Kanada's work is a much more complex combination of elements, ranging from *gekiga* manga to the works of his colleagues, such as Kazuo Komatsubara, Kazuhide Tomonaga, and others in establishing distinctive animation styles. Specifically, I would argue by the influence of the *Tokusatsu* genre. I believe that Kanada's approach was in direct line with a DIY approach of moving image experimentation, where elements were mixed and unified in what is called and recognized as *Kanada style*.

> *Kanada Perspective* dares to boldly collapse the perspective to emphasize a dynamic picture. The *Kanada Jump* stretches out from the bowlegs and jumps up stylishly. Many of the techniques created by Kaneda can often be seen today, such as the *Kanada Beam*, which scatters circular beams of light and converges them into a beam. (Hayakawa, 2020, para.4, my translation[227])

[225] The sculpture is part of the Collection SFMOMA. See: https://www.sfmoma.org/artwork/99.128.A-D (Accessed 2022.04.08)
[226] The sculpture is part of the Collection in the Museum of Contemporary Art Tokyo. See: https://museumcollection.tokyo/en/works/6384102/ (Accessed 2022.04.08).
[227] "パースをあえて大胆に崩してダイナミックな絵を強調する「金田パース」。ガニ股から伸びやかにスタイリッシュに飛びあがる「金田ジャンプ」。円形の光を散らばらせ、収束させてビームにする「金田ビーム」など、金田氏が生み出した技術は多く、現代でもしばしば目にすることができます." Hayakawa, Seiichiro (早川清一朗). 2020. Published Online by: Media Vague Inc. See: https://magmix.jp/post/31932/2 (Accessed 2022.04.10).

Kanada's work explores the contrast and contradictory nature of form and composition in a complex timing. Instead of focusing only on flatness, he pushed flat against depth, curved against straight lines, and elastic forms against rigidity, 2s, 1s, and 3s timing, all to create a diverse range of expression. Instead of flat planes, the diversity and contrast of his techniques range created such an impact. After all, besides working at many studios producing robot animation, he also worked with some of the most recognized animation directors, such as Yoshiyuki Tomino, Hayao Miyazaki, and Shigeyuki Hayashi (pseudonym Rintaro). For Miyazaki, Kanada worked on *Lupin III: The Castle of Cagliostro* (ルパン三世 カリオストロの城, 1979), *Nausicaä of the Valley of the Wind* (風の谷のナウシカ, 1984), *Laputa Castle in the Sky* (天空の城ラピュタ, 1986) and *Porco Rosso* (紅の豚, 1992). In Nausicaä, Kanada and Hideaki Anno worked together, with Anno expressing his gratitude in the Kanada Special on NHK because they would often engage in conversations during and after working with Miyazaki.

> The work of a real animator can only be his own. This is because the source that supports and produces the technique, including explosions, screen composition, and everything else (if we call it drawing technique), is the part of the person's physiological innate sense - that should be called qualities. (…) It would be a mistake to think that we can simply imitate his work by drawing rough poses and unorthodox movements. (Miyazaki, 1982, p.92, my translation[228])

Miyazaki perceives in Kanada's work a strong sense of the elements necessary to create movements, such as gravity, inertia, acceleration, and, most importantly, the capacity to mix these elements in their artwork. These elements are incorporated into one physiological matter because an artist distinguishes himself by constructing personalized techniques. That is the psychological quality that an artist mixes into the years of harnessing techniques and experience. In the 80s and 90s, Kanada's recognition among the industry and fans would continuously increase. Kanada also received a fan club and a fanzine dedicated to his work. The animator Osamu Kobayashi and his brother, the illustrator Makoto Kobayashi created the fan club *Yoshinori Kanada Fan Club* (金田

[228] "本物のアニメーターの仕事は、その本人のものにしかならない。なぜなら、爆発も画面の構成も、その他すべてを含んで(それを作画技術というならば)その技術を支え生み出す根源は、本人の生理的な持って生まれた感覚……資質というべき部分だからである。(…) 彼の仕事を真似て、荒っぽいポーズや理屈ぬきの動きを描けばよい、と考えるのはあやまりである."

伊功ファンクラブ), also producing a fanzine when they were high school students in 1981. In the 80s, Kanada created his Original Video Animation (OVA), called *BIRTH* (バース[229], 1984), together with Shinya Sadamitsu. This experimental project follows an intense action sequence, with explosions and dynamic flying scenes. In a sense, this works focuses more on the author's animation qualities than on developing a structured narrative.

Kanada's career covers a diversity of artistic creations and aesthetic styles. In his late period, he would be involved with digital animation and the development of video games. In February 1998, there was a screening of Kanada's work at Tokuma Hall in Shinbashi District Tokyo, under the publication of the *Animage* volume. The exhibition screened the animations *Divine Demon-Dragon Gaiking* (1976), *Zambot 3* (1977), *Invincible Steel Man Daiturn 3* (1978), *Zukkoke Knight: Don De La Mancha* (1980). The event attracted many people in the industry, including Shinya Sadamitsu, Hideaki Anno, Hajime Kamegaki, and others[230]. They also produced a commemorative book *Kanada Yoshinori GREAT* (金田伊功 GREAT) organized by Kazuhiro Ochi and Hirotoshi Sano, collected illustrations and messages from industry members to encourage Kanada on the new step of his career.

"Yoshinori Kanada is moving to Honolulu, Hawaii, USA, for a few years to participate in a theatrical full CG movie production project for a video game company." (Hikawa, 1998, para.3, my translation[231]). Kanada left Japan to join Square Enix to get involved with new technology, especially digital animation, and 3D CGI, which were relatively new at that time. Kanada would work on projects at Square but also continued to collaborate with Japanese Studios. He worked on the art layout for the animation *Final Fantasy: The Spirits Within* (2011). Also, Kanada contributed to the first attempt to make a fully Japanese digital animation, in the first episode of OVA *Blue Submarine No. 6* (青の 6 号, 1998) directed by Mahiro Maeda (前田, 真宏) of Studio GONZO[232].

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[229] See MOBSPROOF (Ed.). (2018), entry "003 バース", p.16.

[230] Animation industry professionals attended the screening: 貞光紳也 (Shinya Sadamitsu), 小松原一男(Kazuo Komatsubara),野田卓雄 (Takuo Noda), 庵野秀明 (Hideaki Anno), 羽原信義 (Nobuyoshi Habara), 亀垣一 (Hajime Kamegaki), 本橋秀之 (Hideyuki Motohashi), 鍋島修 (Osamu Nabeshima). (*Animage*, 1998, 5, *Kanada Special* Booklet attached to *Animage* Magazine, without page numbers).

[231] "金田伊功は、あるゲーム会社の劇場用フル CG ムービーの製作プロジェクトに参加するため、数年間、米国ハワイ州ホノルルに移住することになったのだ."

[232] Director Koichi Chigira (千明, 孝一) mentions the participation of Kanada in the first episode of *Blue Submarine No. 6* in an interview in 2017. See: Kato Masahiro (加藤 真大). 2017 'GONZO 25th anniversary special project Interview with director Koichi Chigira about the production of Blue No. 6, LAST EXILE and Brave Story [part 1]' (GONZO 創立 25 周年特別企画 千明孝一監督に聞く『青の 6 号』『LASTEXILE』『ブレイブ ストーリー』の制作秘話). PIA Corporation. Available at: https://ure.pia.co.jp/articles/-/74509 (Accessed 2022.04.10).

Kanada's contributions to the development of cel animation and digital animation techniques and aesthetic styles influenced many artists working in different fields of Japanese Media. After Kanada passed away, at the Computer Entertainment Developers Conference[233] (CEDEC, 2011), video game designer Masanobu Endō and video game developer Takashi Tokita presented the legacy of Kanada's work in 2D and 3D for video games and animation throughout the first decade of the 2000s.

"Today, Japanese animation is highly regarded for its visual expressions equivalent to SFX, but this was only possible because Yoshinori Kanada was the standard-bearer and pioneer of effect expressions, like the Tsuburaya Eiji of the animation world." (Hikawa, 1998, para.4, my translation[234]). Hikawa's comparison also shows the incomparable influence that both these artists, Yoshinori Kanada and Eiji Tsuburaya had on creating visual effects in the moving image. Kanada's contribution started with *Super Robot* animation but had a lasting effect on how artists think about moving image composition well beyond the animation field.

[233] For Cedec 2011 program details, see https://cedec.cesa.or.jp/2011/program/GD/C11_I0036.html. Contents of the presentation are available on the Cedec Digital Library. See Endō, Masanobu; Tokita, Takashi (遠藤, 雅伸/ 時田, 貴司) (2011) '*Nihon anime no densetsu, Kanada Yoshinori-shi ga gēmu ni nokoshita mono*' (日本アニメの伝説、金田伊功氏がゲームに残した物). Computer Entertainment Developers Conference (CEDEC 2011). Available at: https://cedil.cesa.or.jp/cedil_sessions/view/543 (Accessed 2022.05.08).

[234] "こんにち日本のアニメは SFX に相当する映像表現が大きく評価されているが、それも金田伊功が「アニメ界の円谷英二」のような、エフェクト表現の旗手をつとめ、開拓したからこそ達成できたことなのだ."

Chapter 4: Real Robot and professional and amateur productions

4.0. Real Robot – the golden era of mecha designs

The success of *Zambot 3* and *Daiturn 3* created a stylistic variety that opened the door for *Mobile Suit Gundam* (機動戦士ガンダム, 1979), directed by Yoshiyuki Tomino. The character design was made by Yoshikazu Yasuhiko, and the mechanical design by Kunio Ōkawara. The series contained in-depth science fiction elements, and the mobile suits were inspired by the book *Space Troopers* (1959) by science fiction author Robert A. Heinlein. However, the design followed previous animation elements, such as the horned helmet shining on the forehead, the diamond-shaped eyes, and the mask. They also kept the guns and swords that appeared in *Zambot 3*; however, under the influence of the space opera *Star Wars* (1977), the sword gets a light beam, and the riffle has beam energy. Bullets with light rays pierce the enemy, and a fierce light-thermal sword slices the targets in half. This was a showcase that had never been seen in animation before. Ōkawara, in an interview, recounted some of the details of the mechanical design in *Gundam*:

> Director Yoshiyuki Tomino also said he wanted to create a full-fledged robot animation, so I proposed the idea of moving away from the simple silhouettes of cylindrical and square columns for the limbs that had been used since *Mazinger Z* and adding something more akin to human muscles. (Shimanuki, 2015, p.25, my translation[235])

The storyline is that humanity moved to space to live in its second home, a colony orbiting Earth. In the year 0079 of the Universal Century (a.k.a 1979), the Principality of Zeon fights for independence against the Earth Federation, starting a war that lasts one year and kills half of humanity. In episode one, the Earth Federation citizens have to evacuate because they are under attack from the Zeon mobile suits called Zaku. The Zaku end up killing more civilians, which triggers the young character Amuro to pilot the new mobile suit prototype of the Federation, that is, Gundam. Following, the Federation manages to retreat, but that is when Zeon commander Char

[235] "監督の富野由悠季さんも本格的なロボットアニメをつくりたいと言っていたので、私からは『マジンガーZ』から続いていた、手足の形が円柱や角柱のシンプルなシルエットから離れて、人間の筋肉に近いものを入れようというアイデアを出しました."

Aznable attacks piloting the Red Comet, initiating a gruesome fight between Amuro and Char's mobile suits. The hero had to defeat the enemy that originated from within the colony, and the dramatic development was so convincing that it achieved a higher level of catharsis than battle-only stories alone could. The story also is depicted favorably to Zeon forces, making the Federation and the *Gundam* a resistance to the Zeon overwhelming force. The more humanized design of the robots made by Okawara matched the dramatic storyline. Even though *Gundam* became known as the animation that started the *real robot* representation, researcher Hikawa points to the connection with previous super robot elements as to why it retained such success.

> It was only half a realistic step away from the giant robots fighting monster mecha. In the end, that was a good thing. It is precisely because it played the leading role while retaining the super-robot elements that, unlike later Gundam series and real robots, it remains so memorable to this day. (Hikawa, 2000, p.17, my translation[236])

However, like *Yamato*, the original television series was not so well received at the time of its broadcast. It gained more success once the series was compiled into a movie trilogy, released respectively as *Mobile Suit Gundam* (機動戦士ガンダム, 1981), *Mobile Suit Gundam II: Soldiers of Sorrow*, (機動戦士ガンダム II 哀・戦士編, 1981), and *Mobile Suit Gundam III: Encounters in Space*, (機動戦士ガンダムIII めぐりあい宇宙編, 1982). The *Gundam* success was propelled by the plastic models that entered the toy market. The super robot style did not immediately shift to the real robot. Not every studio was following the *Gundam* realistic robot route, and even Sunrise also released more orthodox super robot animation at the time, such as *Invincible Robo Trider G7* (無敵ロボトライダーＧ７, 1980-1981), and the collaboration with Toei, *Future Robot Daltanious*, 1979-1980).

> During this period, the only tokusatsu work was *Spider-Man* of 1978, which introduced the concept of giant robots or transformed heroes riding and fighting giant robots. This

[236] "怪獣メカと戦っていた巨大ロボから半歩リアルに抜け出ただけだ。結果的には、それで良かったのだ。スーパーロボットの要素を残しつつ主役を張ったからこそ、後のガンダムシリーズやリアルロボットものと違い、ひときわいまも印象に残っているの だろう."

became a full-fledged series, with the first Super Sentai series, *Battle Fever J*, produced in the same year as *Gundam*. (Kakeo; Katō, 1997, p.22, my translation[237])

Hikawa (2000) considers that the elements that made *Gundam* successful were the combination of realism and heroism. At the *Gundam* release, Hikawa worked in many magazines dedicated to animation, tokusatsu, and manga. Since the editors were aware of the launching of Gundam plastic models, they rushed to create publications and Pocket Encyclopedia's aiming at children as their audience. Even though the storyline had a darker tone, the magazines emphasized the mechanical details and, in doing so, captured the children's attention.

The combination of realism and heroism is also expressed in Amuro and Char's characters. Amuro is a young kid who pilots the Gundam but is unaware of the deeper problems and discussions at the federation. He gains battle experience and tries to battle Char, that is more experienced and involved in the reality of the Zeon municipality. The contrast between the character's battle experience and involvement in political matters shows immaturity versus maturity, the child versus the adult, and the individual versus society. In this game of differences, the heroism of Amuro is put against the experience and reality of Char's Zeon supremacy. "And *Gundam* succeeded in taking the human side of the drama back into robot animation one step further by pushing robots aside as mere objects." (Nakajima, 1982, p.206, my translation[238]). Indeed, the human drama and its correlation with the machines became the central theme of the *Gundam* series.

The emergence of the realistic robot line was consolidated with *Space Runaway Ideon* (伝説巨神イデオン, 1980-1981), directed by Yoshiyuki Tomino and produced by studio Sunrise[239]. The storyline follows humanity which had began colonizing other planets. In the Andromeda Galaxy, humans live on the planet Solo and find ancient remains of Ideon. The alien spirit of the Sixth civilization is condensed in the Solo Ship, a spaceship that humanity commandeered to escape from the Buff Clan, and in the giant robot Ideon, which is completed when three machines are combined. They discover that Ideon reacts to protect young children, but its power remains a mystery. As the series evolves, Ideon shows that it moves according to the Sixth civilization

[237]"この時期、特撮作品は 78 年の「スパイダーマン」だけというさびしい状況ではあった体が、折りからの巨大ロボットか、変身ヒーローが巨大ロボットに乗り、戦うというコンセプトを導入していた。これが本格的なものとなるのが、「ガンダム」と同じ年に製作されたスーパー 戦隊シリーズ第 1 弾「バトルフィーバーJ」からとなる."

[238] "そして「ガンダム」は、ロボットを単なる"もの"として突き放すことにより、もう一歩踏み込む形で人間側のドラマをロボットアニメの中に取り戻すことに成功したのである。

[239] See official information about the series. Available at: http://www.ideon.jp/tv/index html (Accessed 2022.04.10).

collective spirit sealed in *Id*, that is, the unconscious, and does not move according to its whims. "The *Id Monster* was a monster of an alien spirit collective that appeared in the American movie *Forbidden Planet*. The mecha that played the main role in *Space Runaway Ideon* was also an alien spirit assembly." (Kakeo; Katō, 1997, p.60, my translation[240]).

The movie *Forbidden Planet* (1956) was directed by Fred Wilcox, and in the film, the advanced race Krell, built a machine to create material objects from thought. However, they could not control their subconscious desires and were annihilated by monsters created by their minds. In the movie, the enemy is the *Monster from the Id*, a creature made of solidified psychic energy derived from the subconscious thoughts of Dr. Edward Morbius, powered by the Krell Machine.

Similarly, the concept of mental energy of the Sixth Civilization being imbedded in Ideon presents the Robot as the direct manifestation of a collective mind; however, it shows destructive powers. In episode 38, Ideon cuts a planet in half as he escapes. The will of Ideon is often referred to as "Ide" = Id, a play between the words Ideon and Id. The choice of Ide manifests as a form of control since it manipulates events according to its desire. The conflict between the psyche of the individual versus the collective is brought as a schizophrenic frenzy because the characters start to hear each other in different locations, all according to Ideon's plans. The character's choices are continuously undermined. In the conflict between the Buff Clan and the human colonizers, Ideon gathers more power. The original plan was for a total of 52 episodes, but due to a lack of growth in toy sales, the series was canceled, and the final number of episodes was changed to 39.

Light flashes come out of Ideon's body in every direction in linear arrangements (especially in episodes 13 and 39). Light comes in the explosions, in the form of mental energy that powers Ideon, and in the destructive power of the machinery. In the final episode, "In the Cosmos with you," Karala and Joliver are from the Buff Clan and Earth, attempting to bring peace to both sides. As it is impossible, Ide releases its infinite power from Karala's baby since she is pregnant. The people from Earth and the Buff Clan all float through space, becoming light due to Ideon's power. The animated series was scrapped and made into two movies, *The Ideon: Contact* (THE IDEON 発動篇) and *The Ideon: Invoked* (THE IDEON 接触篇, 1982) that reworked the series ending. *Yamato*, *Gundam*, and *Ideon* became essential works in animation and film since they were released as stand-alone films in theaters.

[240] "イデの怪物ってのはアメリカ映画『禁断の惑星』に出てきた、異星人精神意識集合体の化け物のことだった。この「伝説巨神イデオン」の主役メカも異星人の精神集合体であった."

4.1. Gundam Newtype = New humans

After *Yamato*, the animation fans started to evaluate and position themselves more assertively in creating fan clubs and fanzines. With *Gundam*, the number of fanzines increased as new reruns and versions were released. One of the first fanzines registered was *Gun Sight* (ガンサイト) produced by the *Gundam Fan Club* (ガンダム FC), which contained explanations about the series, illustrations, and so on. Shinsuke Nakajima has been involved in writing freelance pieces about animation and cites some of the content that was present in the fanzines.

> The characters in the animation have meaning only when the viewer projects a pseudo-personality onto them, so it is essential that the characters are fleshed out in such a way that they can withstand this and induce it. However, the current TV animation is full of characters that are so flat and lifeless that it is hard to say they are alive. Zambot 3 was the first to throw light on this hopeless situation, and I believe that Gundam is a further development of this. (Nakajima, 1982, p.219, my translation[241])

In early robot animations, for example, *Raideen*, there was a mixture of fantasy elements within the mechanical aspects of the robot. However, in the Gundam universe, the pilot Amuro achieves a new stage of human evolution by gaining heightened mental awareness and a sixth sense in space, the so-called *Newtype.* However; the director Tomino avoided using the word Esper or psychic to describe it, calling instead "ニュータイプ = new type." The idea that humanity could develop into a new type became a theory among fans because the term was never fully developed or explained. There was a growing awareness among SF fans of the discrepancy between the older generation, which was critical of visual culture, and the younger generation, which was more tolerant. Once the movies were released after the series, Shochiku's advertising producer, Tadahiko Nobe, wanted to make *Gundam* appealing to the general public by gathering fans in one place. To commemorate the opening of the first movie *Mobile Suit Gundam* (1981), a

[241] "受け手が擬似人格を投射して始めてアニメのキャラはその意味をもつのです から、それに耐えうる、それを誘発するような肉付けは不可欠です。が、今のＴＶアニメは、人物があまりに平板で生きているとはお世辞にも言えない代物ばかりでした。この絶望的状況に初めて光を投げかけたのが〈ザンボット 3〉であり、それを更に発展させたのが〈ガンダム〉であると思っています."

festival was created at Shochiku in Shinjuku, followed by the declaration (*Declaration of New Century Anime*, アニメ新世紀宣言) at the plaza in front of the east exit of Shinjuku Station. The event was held on 22 February 1981, and 15.000 people attended.

> We have the first anime of our time.
> Mobile Suit Gundam is a new type of animation that transcends the receiver and the sender.
> This work appeals to a futuristic world where people and mechanisms are fused with a cutaneous sensation.
> However, in the darkness of the absurdity of battle, the characters simply breathe while suffering and struggling with each other. There, love, and truth are far away.
> Nevertheless, they eventually reach a faint glimmer of a new type, but in reality, we don't even have a glimmer of that.
> Because Amuro's Newtype belongs only to him. This is a drama about the question of living.
> If we are to accept this question, we have no choice but to seek our own spiritual world (Newtype) with deep expectation and determination.
> Now, let us pledge ourselves to the future.
> We hereby proclaim our era opened up by anime and the dawn of a new century of anime.
>
> A New Century of Anime 0001.02.22
> (Komaki, 2009, p.7, my translation)[242]

The event sends a definitive message to anime fans by creating a movement where young people would be at the center. Gathering anime fans also allowed producers to have an idea about the public they should aim for in their productions. Declaring *Gundam* as a *newtype* of animation, one that fans could follow to enhance themselves and that they could also be part of it, made the interaction move closer between fans and production companies. *Ideon* also possessed the newtype

[242] "私たちは、私たちの時代のアニメをはじめて手にする。「機動戦士 ガンダム」は、受け手と送り手を超えてうみだされたニュータイプ・アニメである。この作品は、人とメカニズムの融合する未来世界を皮膚感覚で訴えかける。しかし、戦いという不条理の闇の中で、キャラクター達は、ただ悩み苦しみあいながら呼吸しているだけである。そこでは、愛や真実ははるか遠くに見えない。それでも、彼らはやがて仄かなニュータイプの光明に辿りつくが、現実の私たちにはその気配すらない。なぜなら、アムロのニュータイプはアムロだけのものだから。これは、生きるということの問いかけのドラマだ。もし、私たちがこの問いを受け止めようとするなら、深い期待と決意をもって、自ら自己の精神世界(ニュータイプ)を求める他はないだろう。今、未来に向けて誓いあおう。私たちは、アニメによって拓かれる私たちの時代と、アニメ新世紀の幕開けをここに宣言する。(アニメ新世紀 0001 年 2 月 22 日)."

element, the medium entering the bodies, and the light explosive effects fluctuating on the character's skin. At the end of the declaration of the *New Century Anime*, they marked the year 0001.02.22, making 1981 the beginning of the newtype movement.

"What Mr. Tomino has done through the *Gundam* movie trilogy and the *Ideon Contact* and *Invoked* is to assert that 'Anime is a media for you, the people that live today' and 'Also, anime has come this far. So, what about you?' In other words, it is a provocation." (Nakajima, 1982, p. 222, my translation[243]). Indeed, giving the media to the fans, and encouraging the cultivation of fans' habits, opened the space for the subculture that was already happening to be named in the future, the otaku movement.

Another important aspect is that the fans' activities had matured at the beginning of the eighties. So, their research was being developed at the same time Gundam was broadcasted. The *Gundam* articles[244] that were published in the *Animec* (アニメック) magazine at the time helped the anime to achieve commercial success. The line between fan and artist was blurred since they often fed each other. Artists and researchers once active in fan clubs and fanzines would become producers and artists in the next decade. The admiration for animation and tokusatsu art/techne created spaces where spontaneous activities could emerge and proliferate in Japanese media. It also shows the direction of media, which was getting closer and under people's skin, directly to the retina, creating an emotional connection deeply embedded in the viewer's psyche.

[243] "映画版「ガンダム」三部作と「イデオン」接触編・発動編を通じて富野さんがやったことは、《アニメは今を生きる君たちのメディアだ〉という主張であり、《そして、今アニメはここまで来た。では、君たちは?〉という問いかけ、いや、つまりは挑発なのである."

[244] See Newtype Editorial Department (ニュータイプ編集部). (2019) 'Animec: Gundam 40th Anniversary Issue: The legendary magazine is back for one issue only!' (アニメック = Animec: ガンダム 40 周年記念号: 伝説の雑誌が 1 号限りの大復活!! (カドカワムック; 804). (Kadokawa Mook; 804). Tokyo: Kadokawa.

4.2. Professional and Amateur Productions

The 1980s marked the period when fans who grew up watching tokusatsu and anime became amateur artists, and they would later join professional productions, bringing new aesthetic perspectives. It was also the period where there was a conflict between the older and young generations of fans that had different views of what was considered serious science fiction productions. It was also a political gap because this generation had no direct experience at war; that is, they were not used to engaging in political discussions in daily life. In a sense, the citizenship practice had changed, and this generation's media preferences and artistic practices were also different. "We know from Althusser and Foucault that professional and institutional ideologies are also woven into our daily lives and therefore is not simply the processes of deprofessionalization and deinstitutionalization that enable productive power to emerge in every day." (Atton, 2014, p.348). Instead, the fans became professionals and engaged in small-scale changes within the studios.

Kazutaka Miyatake became famous due to his mechanical designs for the *Macross* animation. His career had been marked by pursuing the anticipation of the three-dimensionality of spaceships in movement. One of his well-known inspirations is the movie *2001: A Space Odissey* (1968), directed by Stanley Kubrick. Until the middle of the 1970s, he had made designs for *Kamen Rider*, *Mazinger Z*, *Yamato*, and other productions as part of Studio Nue. Besides working on animation, Miyatake participated in creating the first movie that utilized computer graphics in Japan.

Before *Macross*, Miyatake had worked on two productions, namely the animation released by Toho *Technopolis 21 C* (テクノポリス 21C, 1982) and *Bye-Bye Jupiter* (さよならジュピター, 1984), a science fiction film directed by Sakyo Komatsu (小松, 左京) and Koji Hashimoto (橋本, 幸治), distributed by Toho Studios. Even though the film was released after *Technopolis 21C*, in terms of work, *Bye-bye Jupiter* came first for Miyatake. For *Bye-bye Jupiter*, Miyatake's involvement began in the early stages of the project around 1979, with imageboards, storyboards, and mechanical designs that should be represented accurately or realistic. "Unlike previous tokusatsu films, *BBJ* introduced new technologies such as Japan's first motion control camera system and computer graphics, and was written and directed by Sakyo Komatsu, the author of the

original novel and an expert on science and technology." (Miyatake, 2007, p.26, my translation[245]). After the success of *Star Wars* movies, new post-production technology was exported to Japan, and motion graphics started being used.

For the movie, Miyatake worked on the main passenger spaceship of the film, TOKYO-M, which appears in the movie title background. "It's nice to see my 2D design become 3D and move on the screen as it should, but it also reveals the way I perceive design, so in that sense it's scary, to be honest." (Miyatake, 2007, p.27, my translation[246]). However, his experience designing the spaceship mechanisms utilizing a new technological approach proved invaluable for his next project.

Studio Nue, which had steadily built up its creative strength, was in charge of the television series *Future Police 99* (フューチャーポリス 99), which later would be renamed *Technopolis 21C*, produced by Toho. Studio Nue was responsible for the original story, designs, and storyboards. The project was initially planned to combine live-action, miniatures, and animated characters. Miyatake was in charge of the three main robots, the technoloids (テクノロイド), which were designed with the assumption that the robots would be realized as suits for actors to wear, like in traditional tokusatsu shows. Miyatake was working on two live-action productions in succession. However, there are differences between designing for animation and tokusatsu. One of the main differences is that for animation works, to reduce time and cost, the number of lines must be reduced to facilitate the workflow. However, in live-action, the number of lines is usually increased to give more attention to details resulting in a realistic design.

Miyatake, in an interview for Figure King magazine, dedicated to action figures, talked about the process of designing for a tokusatsu suit. "When robots are recreated in a suit, the surface wrinkles, as in *Ambassador Magma*, even though it is called a *metal body*. So, Toho and I tried to make a stuffed animal that could move firmly without wrinkling by covering the black rubber suit with hard alloy and plastic parts." (Figure King, 2018, p.23, my translation[247]). However, as the

[245] "『BBJ』は、それまでの特撮映画とは違い、日本初のモーションコントロールカメラシステムや CG といった新技術を導入し、また科学技術に明るい原作者の小松左京本人が脚本・総監督を務め、すべてにおいて科学考証や薀蓄が存在する本格的 SF 映画で、それだけに注目度も高かった."

[246] "自分の描いた 2D のデザインが、本来あるべき 3D となって画面で動くのは、うれしい反爾、自分のデザインのとらえ方が丸出しになってしまうから、その意味では怖いというのが正直なところですね."

[247] "ロボットを着ぐるみで再現すると『マグマ大使』のように「金属のボディ」と言いながら表面 にシワが寄ってしまうんです。そこで東宝さんとゴムの黒いスーツの上に合金やプラスチックの硬質パーツをかぶせることでシワが寄らずにしっかりと動ける着ぐるみを作ろうとしました."

project progressed due to its technical and economic difficulties, it was changed to an animation film instead of a live-action television series and then renamed *Technopolis 21 C*. The final animation film was directed by Masashi Matsumoto (松本, 正志), the character designs were made by Yoshitaka Amano (天野, 喜孝), and the mechanical design by Miyatake. However, Miyatake also says in the interview that Noboru Ishiguro contributed immensely to all members of Studio Nue. "The worldview was not something I came up with alone but was created naturally through interactions with Noboru Ishiguro, who helped with the planning, Kenichi Matsuzaki, the screenwriter of Nue, and a large number of staff members." (Figure King, 2018, p.22, my translation[248]).

The storyline was set in Sentinel City, where crimes using scientific weapons were frequent, and Technopolis was formed to deal with such incidents. Following the attack on the Island Bank, someone steals the most advanced tank, the Temujin. The stealing plot objective was to hack a secret program installed in the Temujin. The Technopolis crew is then deployed to pursue the Temujin tank. For the Temujin design, Miyatake says, "We had Mr. Ishiguro come help with the storyboard. Mr. Ishiguro is an effects animator specializing in explosion scenes. He also likes tanks, so I left it to him." (Miyatake, 2007, p.24-25, my translation[249]). Ishiguro's knowledge, both in terms of technical mechanisms and his ability to create animated effects, helped the transition of initially a tokusatsu that then moved to be only animation. Many attempts to composite live-action and animation were attempted during the seventies, and although some were successful, others had to be modified or canceled. This attests that artists were collaborating to create a new aesthetic movement between the genres, but it was still a challenging task within that period. With all the difficulties of production, the animation film attracted fans that produced a fanzine *R.U.R. Special Edition Technopolis 21C* (R.U.R. 特別編集 テクノポリス 21C) in 1982 with mechanical details, and fans letters.

When *Gundam* was released, there was a controversy about defining animation as science fiction. That is because, until that point, the older science fiction fan generation believed in arguing about the genre definitions and would discuss until consensus could be formed through debate. However, the first generation of "otaku" that matured around the eighties did not necessarily

[248] "世界観は一人で考えるものではなく、企画協力の石黒昇さんや、ぬえの脚本家の松崎健一、大 勢のスタッフとのやりとりで自然に出来上がっていきました."
[249] "テムジンのコンテは石黒さんが切ってくれました。石黒さんは爆破シーンが得意なエフェクトアニメーターで、戦車もお好きなのでお任せしました."

follow the methods of the older generation. There was a gap between their points of view and ways of discussing artworks that dealt with science fiction scenarios. Taimatsu Yoshimoto (2009) argues that the generation gap was related to how political discussions and its presence in daily life had changed.

> However, the first otaku generation was the first generation to have politics removed from their lives at school and in the workplace, and some did not have the experience of controversy itself. Yasuhiro Takeda, born in 1957, and Mari Kotani, born in 1958, commonly say that their generation had no politics, while the older generation had politics. (Yoshimoto, 2009, p.146, my translation[250])

The first otaku generation involved in animation had no direct experience with politics as an active space in their daily life. So, there was a generational gap between the new generation and the generation that had experienced conflict and war. This perception also meant that fans were not considering politics as an element that could be potentially important in the artworks that they were discussing. Science Fiction started as a Literary genre that migrated to visual mediums; in this regard, there were different perspectives at play in the term's definition historically[251].

In Japan, the annual science fiction convention called *Japan SF Convention* (日本 SF 大会) has been held since 1962. The convention was held in different regions of Japan and was named after the hosting city. The first science fiction convention was held in Meguro in Tokyo and as such, was named MEG-CON[252]. At the DAICON 25 held in Osaka in 1986, there was a discussion panel with the participation of Osamu Tezuka and SF writers Taku Mayumura (眉村, 卓), Aritsune Toyota (豊田, 有恒), moderated by the also author Tetsu Yano (矢野, 徹). The discussion was around the establishment and legacy of SF in Japan. Osamu Tezuka was part of the first convention and relayed his thoughts, "We had our first convention, which was a real club meeting in hindsight. Science fiction was a way of bonding outside of business, and I don't think

[250] "しかしおたく第一世代は、学校生活や職場での生活から政治性が払拭された最初の世代であり、論争するという経験そのものを持たない人もいた。一九五七年生まれの武田康廣、一九五八年生まれの小谷真理は共通して、少し上の世代では 政治性があったが、自分たちの世代には政治性はなかったと語っている."

[251] Although related to this thesis topic, for a deeper overview of the Science Fiction term in the Literary circles and its historical changes, see Tatsumi, Takayuki. (2000) 'Generations and Controversies: An Overview of Japanese Science Fiction, 1957-1997.' Science Fiction Studies, 27 (1), pp.105–14. Available at: http://www.jstor.org/stable/4240851 (Accessed 2022.05.17)

[252] Japan SF Fan Group Federation's official website with the list of each Convention since 1962. Available at: http://www.sf-fan.gr.jp/jsfcon/list html. (Accessed, 2022.05.17)

any of us thought we'd go pro, but if you look at the photos from back then, half of us have become active as professionals." (The 25th Japan SF Convention Executive Committee, 1987, p.3, my translation[253]).

The members who joined as SF fans became artists, writers, and professionals working with science-fiction in different art areas. Masami Fukushima established the Science Fiction and Fantasy Writers of Japan (SFWJ) in 1963. The *Japan SF Fan Group Federation* was founded by Takumi Shibano and Masahiro Noda in 1965 and supported fan clubs and fanzines all over Japan. However, as the convention and SF groups appeared in different regions and attracted people from different generations, there was no unified consensus on what could be considered SF. When Yasuhiro Takeda, the future animation director and Gainax studio founder, joined University, he became active in science-fiction clubs in the Osaka region. "Almost every University in Japan had sci-fi clubs, ranging from very small to extremely large." (Takeda, 2005, p.26). Later the groups would form the Confederation of Kansai Student Sci-fi Clubs. Yoshimoto also emphasizes Takeda's view at that time, that there was a sense of rivalry between the Osaka and Tokyo regions. "In addition, there was a sense of rivalry against Tokyo science fiction fandom and opposition to the "small science-fictionism" that only print science fiction was science fiction. Therefore, we decided to actively take up tokusatsu and animation, which were not recognized as science fiction by the "small science fictionism" group." (Yoshimoto, 2009, p.148, my translation[254]). Yasuhiro Takeda met Toshio Okada at an SF festival, "Seto-Con" in 1978. They both would host the *DAICON III* (1981) in Osaka with the idea of taking up tokusatsu and animation as part of the SF territory.

Once they began preparing to host the event, they decided to make an original film for the opening event. As Takeda was introduced to Hiroyuki Yamaga and Hideaki Anno, he remembered how Anno started to create an animation as they discussed how to proceed. "After a bit, he held the pad up and flipped the pages rapidly. A powered suit ran across the paper." (Takeda, 2005, p.48). After that, Takami Akai joined the project, but the budget and materials were the problems. Since cel was expensive, they bought only one cel and took it to the vinyl yards in Osaka. "Sure

[253] "まがりなりにも初めての大会を開いたのだけど、今にしてみれば 本当の同好会としての集まりだった。SF というのは商売以外での結束があったし、まさかプロになるとは誰も思ってなかっただろうけど当時の写真を見ると半分はプロとして活躍しているんですよね."

[254] "それに加えて、東京の SF ファンダムに対する対抗意識や、活字 SF だけが SF だ、とい「小 SF 主義」に対する反発もあった。そこで「小 SF 主義」が SF として認めなかった特撮やアニメを積極的に取り上げていくことにした."

do! He replied, bringing out a roll of sheet vinyl. He said he'd sell it to us for ¥2000 a roll (about US$ 9 in 1981 dollars)." (Takeda, 2005, p.50). As they took the vinyl, they soon realized that the material would be a challenge to use to make an animation.

> Our production site was an empty room in the factory/house where Okada's family lived and ran their business, Okada Embroidering. For the animation paper, we used B5 (176x250mm) sized accounting paper; we made our own tap by hand and punched the holes for the tap into the cut vinyl sheets with a two-hole punch – the kind that office workers use. (Takeda, 2005, p.51)

As they had no experience making animation before, they had to work tirelessly to finish it in time. *DAICON III* opening starts with the Jet VTOL ship that appears in *Ultraman* descending from the sky to Earth. Out of the ship, a member of the SSSP gives a cup of water to the girl outside and asks her to deliver it to "Daicon." As the girl starts her journey, she is obstructed by a mecha robot, and then Gomora from *Ultraman* appears. As she battles with the mecha robot, she catches the missiles causing a massive explosion as it hurls back. After the robot is defeated, he launches a missile that summons *Godzilla* through the symbol that appears in *Space Runaway Ideon* (1980). *King Ghidorah,* alien Baltan, and *Gamera* chase the girl as she flies with her jetpack. The opening also brings lightsabers, star destroyers, the Gotengo ship from the movie *Atragon* (1963), the *Yamato* ship, USS Enterprise from *Star Trek*, and other references in successive explosions and chaos. Finally, the girl finds a weakened *daicon* (meaning radish in Japanese) and gives the cup of water. As it absorbs the water, it turns into the spaceship Daicon that flies into space.

The animation brought up a mixture of characters from science-fiction imagery that challenged the definitions of SF and brought the popular media landmark that had been created up until the eighties. It signalizes that the new daikon spaceship had absorbed and been aesthetically influenced by all these shows and that they were carrying that legacy to the future. Also, before hosting the event, Yamaga, Takeda, and Okada had traveled to the US to WorldCon and Disneyland to gather ideas for their convention. And so, they brought the idea to produce and sell goods, such as mascot figures and powered suits made of polyresin. That inspired Okada to later

on, open his store called General Products [255] in 1982 to produce and sell SF and anime merchandise.

Furthermore, the venture's steady expansion eventually inspired Takeda and his associates to set up *Wonder Festival*[256]. This festival would gather amateurs and professionals working with garage kits, producing figures by molding and casting from prototypes they made. In comparison, artists working with tokusatsu had been developing sculpture-related techniques to construct suits and set props. Now, this practice of DIY making has entered the amateur and professional artists that were working with goods derived from animation and tokusatsu. The first Wonder Festival event was held in 1984 in Osaka, with *Godzilla* at the forefront; the so-called real-life modeling was the event's core[257]. From then on, monsters and anime goods started to appear simultaneously. Because of such initiatives, they were invited to help promote the theatrical version of *Ideon* (1982), helping make goods and advertise for Sunrise Studios.

After *DAICON III*, the group decided to create an independent movie production called *Daicon Film* in 1982. They had Daicon III opening animation copies and raised capital for their next projects. However, as people from Studio Nue had seen the DAICON III animation, they contacted the newly Daicon Film with a proposal, they invited them to help with making *Macross*. "So, when production began for the new show, Anno and Yamaga went to Tokyo to join the staff. It was their first professional gig, and the experience would prove useful in producing their own amateur work." (Takeda, 2005, p.69). In general, the making of *Macross* will count on a large number of young staff who entered the animation industry from the ranks of science fiction and animation fans clubs.

[255] See, "Opening the General Products store," p.61-65; and "Ideon Festival," p.65 in Takeda, 2005.
[256] See more about Wonder Festival in Takeda, 2005, p.87.
[257] The Official Wonder Festival website contains the list of the events by year and information about the core of goods from each event. See: https://wonfes.jp/pastlist/?y=1980 (Accessed 2020.05.06.)

4.3. Modeling Robots Silhouettes: Macross and Dunbine

The Super Dimension Fortress Macross (超時空要塞マクロス, 1982) was created and produced by Studio Nue with cooperation from Artland Studio[258]. When Macross was created, the storyboard artist and mechanical designer Shoji Kawamori also worked with Yoshiyuki Tomino. "It seems that it was not a good idea to work on such a robot project outside Sunrise. But *Macross* was a project that we had proposed to Sunrise in the first place, and it was rejected (laugh)." (Kawamori, 2013, p.129, my translation). Even though Sunrise rejected the Macross project, Studio Nue decided to create the project. The studio had artists with a range of specialties, such as animators, designers, novelists, and illustrators collaborating on the artworks. They were involved in all animation steps from start to finish. While Kawamori was working on *Crusher Joe* (クラッシャージョウ, 1983), directed by Yoshikazu Yasuhiko and produced by Studio Nue and Nippon Sunrise, he met the animator Ichirō Itano (板野, 一郎).

Ichiro Itano started working on Studio Musashi together with Yuji Moriyama (森山, 雄治), and his first participation was on *Wakusei Robo Danguard Ace* (1977). Itano and Moriyama also worked on *Yamato* together afterward. In an interview, Itano recalls that being a beginner animator that worked mainly in-between animation was difficult.

> They said, "You don't have to think about acting like a human being. It's all the original artist's idea, so it's not for the animators to think about". The policy there was, "You're paid on a piecework basis, so you should tap the tap and draw as many moving images as you can to get paid so that you can make a living." (Oguro, 2004, p.1, my translation[259])

After working for three months, they quit the studio and went freelance, working as subcontractors for different studios. That is how Itano ended up working with Yoshikazu Yasuhiko and Yoshiyuki Tomino in the *Gundam* television series. "(…) around the time of Char's return

[258] Artland was an animation production company set up by animation director Noboru Ishiguro. The studio was the production centre for *Macross*, and later utilised the know-how gained from *Macross* to produce the OVA *Megazone 23* (メガゾーン 23, 1985) and other works.

[259] "「人間としての芝居なんか考えなくていい。それは全部原画が考えたんだから、動画の考える事じゃない」と言うわけ。「出来高なんだから、タップ割りして、１枚でも多くお金がもらえる動画を描いて、生活ができるようにしろ」というのが、そこの方針だった."

(episode 26, *Resurrection of Char*), I had already become an original picture artist. After that, my name started to appear (in the credits) as an original picture." (Oguro, 2004, p.1, my translation[260]). For works such as *Crusher Joe* and *Gundam*, Itano still had to adhere to stylistic unity, not having much opportunity to explore his animation style. It was Tomonori Kogawa (湖川, 友謙), the animation director on *Ideon* (1980) and founder of the short-lived studio Bebow (ビーボォー, 1979-1989) that helped Itano find space for creating his artistic style. Kogawa often covered for Itano, in the case studios asked for corrections regarding his style. In an interview, Itano explains Kogawa's support: "You can do whatever you want. I'll say Bebow did it. He defended me against the stereotypical fixed direction, saying, Bebow unifies Bebow, so it's fine. So, it was thanks to Bebow that I blossomed." (Oguro, 2004, p.2, my translation[261]). Itano worked in *Ideon*, producing depth movement, explosions with massive missile launches, and the use of light rays from the robot in a unique way. Kawamori was aware of Itano's distinctive animation style and invited him to join the *Macross* project.

> Itano: The fact that we were allowed to do whatever we wanted was attractive, but we could work so hard because of the novelty of Kawamori's design. I liked airplanes, so I was surprised that they could transform into robots without any tricks. When we were doing the aerial battles in *Crusher*, I thought, "Maybe this (similar fighter) will become a robot (in *Macross*). It has two legs, and I think its face will come out from here". (Oguro, 2004, p.2, my translation[262])

Because of the complex mechanical design developed by Kazutaka Miyatake and Shoji Kawamori, there were concerns about the possibility of animating such complex devices. The story plot is about an alien spaceship that crashes on Earth, and then a military organization reverse engineers the technology and names it SDF-1 Macross. In the launching ceremony, the Macross

[260] "(…)レイアウトをもらって二原を描くようになって、シャアが帰ってくるあたり（26 話「復活のシャア」）ではもう原画になってますね。その後ぐらいから原画で（クレジットに）名前が出始めて."

[261] "「好きにやっていいよ。ビーボォーがやったって言うから」と言ってくれて。固定概念を持った演出に対しては「ビーボォーはビーボォーで統一してるんだからいいだろう」と弁護してくれて。だから、開花したのはビーボォーのおかげですね."

[262] "板野:「好きにやっていい」というところも魅力だったんですけど、なぜあそこまで頑張れたかっていうと、やっぱり河森のデザインの斬新さ。僕は飛行機が好きだったから、それがインチキなしでロボットに変形するのに驚いたんです。『クラッシャー』の空中戦やっている時に「（『マクロス』では多分、これ（と似たような戦闘機）がロボットになるんじゃないかな。足がふたつあって、ここから顔が出るんじゃないかな」と思ってたんですよ."

cannon fire automatically, starting a war with the aliens known as the Zentradi. A civilian pilot, Hikaru Ichijyo, takes the new prototype VF-1 Valkyrie to engage with the enemies. Then the fighter aircraft transforms into the *gerwalk* mode (robotic legs make it possible to walk) and the *batroid* mode (humanoid robot). After transforming in the final stage, Hikaru encounters Lynn Minmay and rescues her from the aliens. Valkyrie is a realistic-looking fighter aircraft that smoothly transforms into a humanoid form. It is not a simple transformation with hands and legs sticking out, but highly three-dimensional and complex. Kawamori explains the thought process behind the design:

> If it's a fighter plane, I'm not convinced if it doesn't look like an aerodynamic form that flies. From a young age, I was immersed in air shows at Atsugi Air Base and at Seaside Motor, an imported car dealership that later became a sacred place for supercars, and I often saw cars undergoing maintenance, which probably influenced me. (Shimanuki, 2015, p.43, my translation[263])

The Atsugi Base[264] is a jointly base USA/Japan located across Ayase and Yamato City that holds different squadrons for self-defense and air program development, and US Navy jet fighters also fly the base. Two tactical fighter aircraft inspired Valkyrie, the American twin-engine McDonnell Douglas F-15 Eagle and the Grumman F-14 Tomcat developed by the USA Navy Naval Fighter Experimental (VFX) program. Kawamori would later also help build the *Diaclone* toy line for Takara, which consisted of transforming vehicles and robots. In the latter half of the decade, Takara would then develop the *Real & Robot* series, including the *Car Robot* series, which transforms real cars into robots and is known as the series that produced many items that formed the core of the *Transformers* series.[265] Kawamori's designs were inspired by observing the aerodynamics of planes from the local air base and car dealer's shops which made him aim to re-create solid designs for transforming robots, planes, and cars.

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[263] "戦闘機なら本当に飛ぶ空力的なかたちに見えないと納得できない。小さい頃から、厚木基地の航空ショーや、後にスーパーカーの聖地と呼ばれる輸入車ディーラー店「シーサイドモーター」に入り浸っていて、整備途中の車の様子なんかもよく見ていたのも影響していると思いますが、おかげでメカの構造は内も外も頭に叩き込まれていたんですね."

[264] For further information, see Atsugi Air Base's official website: https://www mod.go.jp/msdf/atsugi/about/index.html (Accessed 2022.04.06).

[265] For further information, see Takara Company official website: https://www.takaratomy.co.jp/products/diaclone/the_diaclone/ (Accessed 2022.04.06).

Another innovative idea of Macross is that the character Lynn Minmay becomes an idol singer on board the spacecraft SDF-1 Macross. Her songs, which cause confusion amongst the alien Zentradi soldiers, are used as a strategy in the conflict. “If you have to solve a war with weapons, you can do that in any film. That pattern is commonplace in both novels and live-action films and is not truly original. I thought about it and came up with the idea that if a singer gives the enemy a culture shock, it should be possible to end the war.” (Kawamori, 2013, p.139, my translation[266]). The idol singer Lynn Minmay is voiced by Mari Iijima, helping launch her career as a j-pop singer partly because of the series success. The fictional idol and the songs became a musical movement that is the base for the later appearance of virtual idols like Hatsune Miku.

The animation directors for Episode 27: *Love flows* (愛は流れる) were Itano and Haruhiko Mikimoto (see Figure 12 and 13). The character Lynn Minmay sings while the Macross ship has one hatch open, and there are attacks from both sides. The episode presents the ethereal singing of Lynn against the dynamic flow and zigzag of fighters coming from different directions. This episode was remarkable in terms of narrative and animation innovations. In the last battle scene of the episode, Hideaki Anno and Fumio Iida helped Itano finalize the animation. Anno left a signature mark at the end of this episode, inserting the DAICON girl in the chest of one Destroid robot (see Figure 12). It was the first professional work for amateurs Hideaki Anno and Hiroyuki Yamaga, and as beginners, their names were not inserted in the animation credits. However, by inserting the *daicon girl*, Anno left an aesthetic signature that identified their contribution to *Macross*.

> Itano: Probably, yes. Anno and Iida (Fumio) did the last part.
> Oguro: In the fortress, just before the Daedalus Attack, there’s a DAICON girl on the chest of the Destroid.
> Itano: I drew the shape of that attack (on the surface of the fortress) as it changes shape. I think that part was done by Anno. Are they stop-motion images?
> Oguro: Yes, stop-motion drawings.

[266] “武器で戦争を解 決するんだったら、どんな作品でもやっていますからね。そのパターンは小説でも実写映画でも当たり前で、真のオリジナルとはいえない。そこまで考えて、歌手が敵側にカルチャーショックを与えるんだったら、戦争も終わらせうるはずだって思いついたんですね.”

Itano: At that time, I think Anno used to draw cuts where he used static pictures to add detail. (Ogura, 2004, p.2, my translation[267])

Figure 12 Love Flows, Macross (1982) and DAICON III opening animation (1981)

This episode demonstrated Itano's approach to animating different scenes, specifically with attention to the flow of spaceships, missiles, and explosions that he had been steadily developing. In *Ideon* episode 29, *Sparkling Sword* (閃光の剣) the mecha Adigo for the Buff Clan movement increases in speed and direction. To achieve this, Itano increased the length of action, since they couldn't increase the number of cuts, they did three cuts in one cut; and split some sections that were originally one cut into several. The shape of the explosion and the smoke trails left by the missiles were also unique.

To achieve the smoke effects trails Itano used a pencil making twisted lines and plying intensity. "I was particular about the pleasant feeling of that smoke lingering in the eyes. I was also familiar with lenses, so I was conscious of using a wide-angle lens, a telephoto lens, and a standard lens. I didn't decide on one lens for each shot but would switch from wide-angle to telephoto within one shot." (Ogura, 2004, p.3, my translation[268]). Itano was attaching cameras to

[267] "板野: 多分、そうです。最後は庵野と飯田（史雄）君がやったんですよ。小黒: 要塞の中で、ダイダロス・アタックみたいな攻撃をする直前で、デストロイドの胸にＤＡＩＣＯＮの女の子が描いてあったりするのは……。板野:あの攻撃の(要塞表面が)ボコボコと形が変わるのは僕が描いています。その辺は、庵野かな。止め画ですか？ 小黒: 止め画です。板野: あの頃は、庵野が、止め画でディテールアップするようなカットを描いていたんじゃないかな."

[268] "その煙が目に残る気持ちよさにこだわっていたんです。僕はレンズにもちょっと詳しかったので、広角レンズ・望遠レンズ・標準レンズの使い分け(を意識した）。それもカットごとに決めないで、１カットの中で広角から望遠に切り替えたり."

the missiles and applying his technical knowledge of combat scenes of fighter jets to it. The movement and approach were differentiated for each missile type, giving a sense of intense movement flow and realism. Itano also considered the acceleration effect that pilots could withstand while piloting a fighter jet due to the human physiology response to gravity. Itano describes the process in this interview:

> When I do my own drawings (for *Macross*, for example), I shoot at least six missiles at a time. I fire at least four shots. Two of those missiles are "serious honor student" missiles, which track the enemy aircraft and fly straight. The other two are the "too smart missiles" that anticipate ahead of time (laughs). (…) And there is another type, which is the "stupid missile" (laughs). It's called a proximity fuse, and it doesn't have to hit you, it just has to come close and explode there to harass you. They hit the wings or the fuselage with debris or something to make it go bad. Generally, the honor student, the anticipator, and the idiot missile fly together. And the stupid missiles are stupid, so they always come close to the camera when it's there (laughs). (Ogura, 2004, p.3, my translation[269])

With his knowledge of types of missiles, movement trajectory, and type of explosion, Itano animated potential movement flows that came to be known as *Itano Circus* (板野サーカス). By inserting the honor student, the anticipator, and the idiot double missile number flying together, Itano gave them different movements, trajectories and explosion characteristics, attaching them to a fictional camera, which was a different approach to creating animation effects. The name *Itano Circus* appeared because Kazutaka Miyatake, in an interview[270], said that Itano's battle scenes are like a *circus*.

[269] "『マクロス』などで自分が作画する時は一度にミサイルを６発ぐらいは撃ってるんですよ。少なくとも４発ぐらいは撃つんです。その内の２発が敵機を追尾してまっすぐ飛ぶ「マジメな優等生」。もう２発が先読みをする「頭よすぎるミサイル君」（笑）。(...) で、もうひとつのタイプがあって、これが「バカミサイル」（笑）。(...) 近接信管ってやつで、当たらなくてもいいから近くまで来て、そこで爆発して、いやがらせをする。羽や機体に破片を当てたりして、調子を悪くさせる。大体、優等生、先読み君、バカミサイルが一緒に飛んでいって。で、バカミサイルはバカだから、カメラがいると必ず寄ってくる。（笑）."

[270] "In the November 1982 issue of *My Anime*, mecha designer Kazutaka Miyatake was interviewed and said" "We call it *Itano Circus*." Ogura, 2004, p.4. Available at: http://www.style fm/as/01_talk/itano04.shtml (Accessed 2022.05.06).

Figure 13 Itano Circus in Macross(1982), Episode (27) Love Flows[271]

Itano admired Yoshinori Kanada's style of explosions, but he also wanted to develop his artistic expression. To establish this style and build a new set of techniques, Itano visited demolished sites to observe how materials disintegrated. One such site was the demolition of a school he got government permission to observe. After the destruction, he also observed smoke patterns depending on the burned material. In such observations, Itano realized that the smoke form would be engulfing, rotating, and also not the same size, spreading out, changing shape, and splitting into branches. "I did not just draw circles, but also half-moons, crescent moons, and children's (small explosions). I studied hard to create repeats, which is where the deformation of animation comes into its own." (Oguro, 2004, p.2, my translation[272]). Observing the dynamics between space and gravity, the explosion depended on the material and how it collapsed and disintegrated.

This observation pattern comes back from his childhood activities of launching fireworks on the Enoshima coast with his friends. They also reenacted tokusatsu explosions utilizing small fireworks and recreating battle scenes. "I run and say, all right, let's play *Kikaider vs. Hakaider*! In the old tokusatsu movie (Android), Kikaider (riding a machine) is chased by Hakaider and goes towards a strange black circle on the road, and the circle explodes with a bang. (…) The winner of

[271] Still-image from: *Makurosu 25-shūnen kikaku! HD rimasutā DVD*. (2008) Noboru Ishiguro. Japan: Bandai Visual, (16h), (DVD).
[272] "それもただの円形が広がるんじゃなくて、半欠け、三日月、あと子ども（の爆発）をいっぱい描いたりとか。そういうところで、アニメーションのデフォルメが活きるリピートとか、そういうのも一所懸命に勉強して."

the rock-paper-scissors game is Hakaider, and the loser is Kikaider." (Oguro, 2004, p.2, my translation[273]). The tokusatsu *Android Kikaider* (1972) utilized real explosions as effects as both characters Kikaider and Hakaider ride their motorcycles and evade explosions from the ground. Children and young adults who grew up watching tokusatsu television series would often reenact the fights.

Famously *Ultraman's* episode 34, called *A gift from the Sky* (空の贈り物), aired in March 1967 with the script written by Mamoru Sasaki (佐々, 木守) and directed by Akio Jissoji (実相寺, 昭雄), introduced the comic spoon scene[274]. The scene comes after the monster Skydon (スカイドン) is chased off into space, however; he is then accidentally shot down by the Defense Force. Hayata is eating curry when he is informed of this news; panicked, he goes outside and tries to transform into *Ultraman* but mistakenly raises his curry spoon instead of the beta capsule that he uses to transform. This was a success among the children, who started playing with spoons to reenact the *Ultraman* scene. Aside from his personal childhood experiences, Itano developed his aesthetic style by consistently observing different explosions and developing technical knowledge while animating by trial and error. In *Macross,* they also did visual effects directly on cel since they had a demanding schedule. Sometimes when the animated cel did not have shadows, Kawamori would use a pen and add the shadows by hand.

> First, I used a black oil-based paint pen to add one more layer of shadow to the normal finish, and then I added details with paints. This gave a greater sense of scale than I had expected. I had seen the special effects people brush, so it was important to understand that I could just paint over the top. I knew that the brush would rub off if I didn't protect it later, but the paint would be fine once it dried. (Kawamori, 2013, p.140, my translation[275])

[273] "そっち方面に走って「よーし、キカイダーＶＳハカイダーごっこだ！」と言って。昔、特撮の「（人造人間）キカイダー」で、（マシンに乗った）キカイダーがハカイダーに追われて、変な黒い丸が道路に置いてある方に行くと、その丸がバーンと爆発するんですよ。(...) ジャンケンで勝った人がハカイダー、負けた人がキカイダー."

[274] Akio Jissoji wrote the book "星の林に月の舟―怪獣に夢見た男たち" (*The Forest of Stars and the Boat of the Moon - The Men Who Dreamt of Monsters*, 1991) telling his memories of Tsuburaya Productions at the time of *Ultraman*. He also directed the drama "ウルトラマンをつくった男たち 星の林に月の船" (*The Men Who Made Ultraman: The Forest of Stars and the Boat of the Moon*, 2005) that reenacts his unique view of the direction in *Ultraman*, including the clash with the staff about including the comic scene of the spoon in episode 34.

[275] "まず普通の仕上げをしてもらったものに、油性ペンの黒 を使って一段階影を強くして、そこに絵具でディテールを 描き足していく。これは思った以上にスケール感が出まし た。特効の人がブラシを吹いているのを見ていたから、じゃあ上から塗ればいい」って理解していたのは大きかった。ブラシは後で保護しないと擦れちゃうけど、絵具は乾けば大丈夫だよなって."

Interestingly, *Yamato*, *Gundam*, and *Macross* became franchise series representing the cornerstone of robot anime. The original animations of this series used animation effects, often emphasizing the presence of the artist's hands, even in highly technological depictions. There are parallels between *Gundam* and *Macross* since they included realistic transforming robots. *Macross* was adapted by Harmony Gold USA as *Robotech* (1985) and released in the United with a line of toys. These franchises are active until contemporary times, expanding the longevity of forty years by producing animation, movies, toys, video games, and more.

After *Gundam*, Sunrise sought a new type of robot silhouette in the otherworldly fantasy *Aura Battler Dunbine* (聖戦士ダンバイン, 1983), directed by Yoshiyuki Tomino and primarily based on Medieval European folktales. Miyatake was involved from the beginning of the project, helping decide on the concept of the insect-like design. The concept of *Dunbine* was a mechanical system that incorporated other technologies into an organic body, such as insect muscle fibers.

Since the story was conceived as a robot story set in a fairy world, they got inspiration from the mystical motif of *Raideen,* including the carving stones containing deities and armor that come to life. As an example of a modified character, they had to look at *Kamen Rider* to discover a way to create the design. Ishinomori based his design on a grasshopper. "When the project was thus developed, and the concept of the worldview was next considered, Miyatake presented an illustration of the main characters riding on hand-knitted cicadas and bees. This illustration led to a shift in the design of the main robot to an insect-based design (...)." (Miyatake, 2007, p.48, my translation[276]). In a way, Miyatake created a new robot silhouette derived from the insect's outer shell, creating a new way of depicting an inorganic & organic character. Tomonori Kogawa was responsible for the other character's design.

Miyatake, at this time, had been working on *Gundam*, *Macross,* and *Dunbine,* the last having a very different approach in terms of representation. In *Dunbine,* the fighting suits were powered by life energy called aura that supplied power and defense to the mecha. The fairies in work have insect wings. The concept of a mechanical system that incorporated IC chips and other technologies into an organic body, such as insect muscle fibers, was developed while observing

[276] "こうして企画が進行し、次に世界観のコンセプ トを思案したときに、宮武が提示したのは、手編をつけたセミやハチに乗った主人公たちのイラストであった。このイラストをきっかけに、メインロボットのデザインは昆虫をベースにしたものへとシフトしていく(…)."

real insects. Because of the innovative take on blending insect functions on a robot, this animation became distinct in the robot anime genre.

After *Gundam* and *Dunbine*, Sunrise launched the series *Heavy Metal L-Gaim* (重戦機エルガイム, 1984), directed by Yoshiyuki Tomino, also hiring young staff, including Mamoru Nagano. In the design of the Heavy Metal (HM) robot, Nagano made a multi-jointed movable frame, a drive system that controlled movement with a double-jointed, cylinder-controlled contraction system. Nagano, who worked on models and had a deep knowledge of tanks, wanted to create robots that didn't use human movements as a reference. In a way, Nagano constructed designs with the view of a robot skeleton appropriated to a more realistic machinery movement. This technical knowledge came into use when he helped design the RMS-099 Rick Dias, a second-generation mass production mobile suit featured in *Mobile Suit Zeta Gundam* (機動戦士Zガンダム, 1985). The adaptations in the design ensured a 360-degree panoramic movement of the cockpit and a smoother movement in the manufactured toys.

"As well as its silhouette (appearance), Nagano Robot is characterized by its skeleton and the movements produced by it, as well as by the roar produced by the movement of the giant metal." (Iida, 2015, p.63, my translation[277]). Nagano produced a design that conveyed the movement but also the presence of heavy machinery. His new way of portraying robots departs from the idea that the robot skeleton must be different from humans to make the sides (or shoulders) move freely. The exploration of designing robot silhouettes and storylines came to a stall. The decline of the real robot genre caused conflict within the studios but also an opportunity for new elements to surge.

[277] "シルエット(外見)はもちろんのこと、骨格とそこから生み出される動き、巨大な金属の動作がもたらす轟音に対するこだわりが、永野ロボの特徴である."

4.4. The decline of Real Robot

From then onwards, different approaches to the real robot genre appeared, for example, *Armored Trooper Votoms* (装甲騎兵ボトムズ, 1983), directed by Ryosuke Takahashi, which depicted mecha fighting each other for sport in a post-war scenario. *Super Dimension Century Orguss* (超時空世紀オーガス, 1984), directed by Noburo Ishiguro, is filled with science fiction elements such as parallel worlds and orbital elevators. In 1984, giant robot animation swept television and theaters to the point where giant robots were on every channel.

However, the real robot animation began to run out of steam. Even with the sequel *Mobile Suit Zeta Gundam*, 1985, it was difficult for the real robot line to come back to life. The next boom started with the *Transformers* series, which started the same year as *Zeta Gundam* and transformed everything from cars, ships, and guns into robots. The success of Takara toys, such as *Transforming Cyborg 1* (変身サイボーグ 1 号), *Microman* (ミクロマン) items of 1/60 scale (approx. 3cm) figures of robots, bases, and vehicles, shaped the 70's toys.

However, in the 80s, they wanted a more realistic toy, which is why: "The development team for *Diaclone* was changed drastically from that of *Microman*, and we asked Studio Nue to help us with the design." (Takatani, 2017, p.99, my translation[278]). The *Diaclone* series of transforming and combining robots and the *Microman* series of toys was later licensed by Hasbro to create the *Transformers*, which has expanded to form a multimedia franchise. *Transformers* became a hit in the US before they became successful in Japan and were then re-imported to Japan.

Subsequently, it was also a time when RPG (role-playing games) on the Nintendo Entertainment System, starting with *Dragon Quest*, became a hit, and SD (Super Deformed) characters, which were cute designs of *Gundam* mobile suits, became popular among children. By the end of the eighties, videogames of Robot were incorporating SD characters and fantasy RPG elements. One example of this period can be found in the animation series and also turned videogames such as *Magic God Hero Legend Wataru* (魔神英雄 伝ワタル, 1989), by Sunrise Studios. The deformed and cute characters that started appearing in the late eighties also originated in combination with the robot anime genre. Mika Akitaka worked as a mechanical designer for

[278] "「ダイアクロン」は開発チームも「ミクロマン」までの編成から大きく変更し、デザインはスタジオぬえに協力してもらいました."

Sunrise but was originally an amateur illustrator and toy modeler. He released illustrations for the magazine *Modelkasten* (モデルグラフィック) on the series *Mobile Suit Girl* (MS 少女).

> Illustrations of anthropomorphic robots and girls in power suits have been around since the early 1990s. Still, Akitaka's 'MS Girl' developed a unique design that blended the heroic appearance of mobile suits (MS) from the Gundam series with the cuteness of girls and quickly made this genre famous. (Sayawaka, 2015, p.49, my translation[279])

The combination of mecha designs and cute girls started being disseminated, and there was a perceived decline in the traditional real robot animation dedicated to SF. Additionally, by the beginning of the 90s, magic girls such as *Sailor Moon*, (美少女戦士セー ラームーン, 1992) proved that the *shojo* (intended for girls) would become unstoppable. However, an aesthetic style's apparent decline or death can survive and reappear with newly incorporated elements. The term *real robot* or the realism tag came to be a difficult position for the genre. "The curse of the word real has made me use the word with caution. *Macross* is *similar to real* but not real. Nowadays, there is no way they would do that kind of aerial combat. Still, they do it because it is a simulator that emphasizes exhilaration." (Kawamori, 2013, p.148, my translation[280]). The so-called golden era of mecha designs in the first half of the eighties meant that the highest point of a genre could cause its demise, or is it?

Decline periods of an artistic style are often perceived as desertic; however, innovative elements can grow from the seeds planted in such periods. In the 1990s, the increasing fragmentation, with works targeting both younger and older audiences, made it seem like perhaps the mecha portrayed since the post-war had disappeared. However, the technological advances of the internet and digital media will bring software to the robot hardware depicted so far. It also will challenge the analog composition techniques of both animation and tokusatsu, and artists will have varied responses on how to adapt their artistic style to the digital medium.

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[279] "ロボットの擬人化やパワードスーツを着込んだ少女 のイラストは 90 年代前半からあっ たが、明貴の「MS 少女」は「ガ ンダム」シリーズに登場するモビ ルスーツ(MS)の雄々しさと、女の子のかわいらしさが溶け合う独特のデザインを発展させたもので、このジャンルを一気に有名にした."

[280] "リアルという言葉の呪縛それからリアルっていう言葉を、慎重に使うようになった気がします。『マクロス』はあくまで「リアルっぽい」ものであって、リアルではない。いまどき、あんな空中戦をやるわけがないけど、爽快感重視のシミュレーターとして演出しているからやるんです."

Chapter 5: Rebuilding Robot Anime and Tokusatsu

5.0. Humanoid Robot – rebuilding the genre and the machine interiority

To understand the transformation of robot anime in the first half of the 90s is necessary to look at the new generation of artists that were coming forward. After establishing Daicon Film and newly acquired professional animation experience at *Macross,* the group decided to make live-action tokusatsu and the *DAICON IV* (1983) animation. The director was Hiroyuki Yamaga; the animation directors were Hideaki Anno and Takami Akai. Contributors for animation, respectively Yoshiyuki Sadamoto, Mahiro Maeda, and Norifumi Kiyozumi. Additionally, Kazutaka Miyatake and Ichiro Itano also participated. They finished the animation four minutes before the event started and sold 2.000 copies.[281]

In *DAICON IV*, the girl from the previous animation is now an adult wearing a bunny costume. She fights many monsters that appeared in the last animation and fights Darth Vader with a lightsaber duel. A xenomorph from the movie *Alien* (1979) appears, and after that, a Dyna Robo (robot) from the Toei tokusatsu *Scientific Squadron Dynaman* (科学戦隊ダイナマン, 1983-1984) tries to crush the bunny girl. She stands over Stormbringer's sword. There are multiple SF references in the background as she moves, such as SDF-1 Macross, VF-1 Valkyrie, American comic superheroes Batman & Robin, Superman, Lord of the Rings, Conan, etc. After the girl jumps off, the sword splits into seven parts, which fly through the sky in a motion that reminds the style of *Itano Circus*. A sequence of SF spaceships crashed into each other, and enormous blasts of seemingly atomic bombardments span across the city. Sakura flowers blow, and a massive beam is launched across the planet regrowing new life. They finish with a crowd of SF characters from Japan, Europe, and the U.S, and as the camera zooms out of the solar system, a new Daicon logo appears. Besides the amateur animations, they also engaged in amateur tokusatsu productions.

The first tokusatsu project was *Kaiketsu no Tenki* (怪傑のうてんき, 1982), a parody of hero shows with Takeda playing the main character and directed by Toshio Okada.[282] It is a satire of Toei's tokusatsu *Kaiketsu Zubat* (快傑ズバット, 1977), which Shotaro Ishinomori created. It

[281] For more see "DAICON IV オペニングアニメ", pp.210-220 in Okada, Toshio (1998).
[282] For more details, see http://www.gainax.co.jp/wp/archives/kaiketsu-notenki/ (Accessed 2022.05.02.).

was followed by *Kaiketsu No Tenki 2: Jun Ai Minatomachi Hen* (快傑のーてんき 2 純愛港町編, 1984), *Kaiketsu no Tenki in the USA* (快傑のーてんき in the USA, 1984) and *Role-playing in Seoul* (ロールプレイングのーてんき in ソウル), screened at the MIGCON, Japan Science Fiction Convention, August 1988. These productions had an amateur approach and relied on comical relief.

In a more planned manner, the *Aikoku Sentai Dainippon* (愛國戰隊大日本, 19min, 1982) was directed by Takami Akai; the special effects director was Hideaki Anno. It was a parody of the tokusatsu Super Sentai Series and the Soviet threat during the Cold War. The sentai group consisted of Ai Kamizake, Ai Harakiri, Ai Sukiyaki, Ai Tempura, and Ai Geisha, who flighted against monsters and Dainippon Robots sent by the evil organization Red Bear. Using typical elements of Japanese culture is clear that they used parody that laughed at the political situation of the time. At the beginning of the live-action, a character is in the bookstore, and as he opens the book, all the pages turn communist red as he says: *Surprise! Your Textbooks Are Red Hot, too!* (びっくり！ 君の教科書もまっ赤っか). "We filmed all over Osaka, from the then-empty lot on the Osaka University Campus, (…), to various parks around the city, including the one by Osaka Castle and the one where the World Expo of 1970 was held." (Takeda, 2005, p.74). They manufactured their explosions, props, and suits, and most of the staff were college science majors.

The 8mm film premiered at *Tokon 8*, the 21 annual Japan Sci-fi Convention, and caused controversy due to its political content, even if it was supposedly a satire. Author Yasutaka Tsutsui censured the film, saying: "I remember the recent SF convention, where the stupid performance escalated to the point where they made an 8mm film about eradicating right-wing communism as a parody, which was frowned upon." (Tsutsui, 1988, p.106, my translation[283]). The political content and the parodies were not well received by authors specialized in SF, with a different political reading of their film. This shows how delicate the dialogues between the generations had become up to this point.

Before entering into the production of the Daicon films, when Hideaki Anno entered Osaka University of the Arts in 1980, the same year that *Ultraman 80* was released, he made an Ultraman fan film, an 8mm short where he portrayed *Ultraman* and fought monsters. For the promotional

[283] "そういえば最近の SF 大会、アホな演しも争がエスカレートして、パロディと称し右翼的な共産主義撲滅の 8 ミリ映画を作って顰蹙を買ったと思ったら、(…)."

activities for the 1983 science fiction convention *DAICON IV*, three years later, Hideaki Anno led the Daicon Film team to make the *DAICON FILM version The Return of Ultraman* (DAICONFILM 版帰ってきたウルトラマン, 1983, 8mm, 26 min). The tokusatsu film was made utilizing miniature works and explosives. The *Ultraman* character was played by Hideaki Anno, wearing a costume that didn't hide his face. The MAT uniforms were designed by Anno, combining the Ultra Guard in *Ultraman* and the Earth Federation Forces of *Mobile Suit Gundam* uniform designs.

Furthermore, in 1985 Takami Akai directed *Eight-Headed Giant Serpent's Counterattack* (八岐之大蛇の逆襲, 1985, 16mm, 72min[284]). Akai recreated the urban area of Yonago City using a large number of miniatures. Shinji Higuchi was responsible for the special effects since he had previous experience helping with miniatures and effects in *The Return of Godzilla*, 1984, and he also helped with storyboard[285] for *Bye-bye Jupiter* (1984). Higuchi talks about how 1984 brought much change for tokusatsu in an interview in 1997.

> Around that time, *Bye-bye Jupiter* (1984, Toho) was made, and I thought, 'This will change tokusatsu in Japan!' I skipped school and immersed myself in the Toho studios. I then started to work on the set and was there for the 1984 revival of Godzilla as a part-timer in the molding department. After that, I continued to work part-time at Toho Special Art, making miniatures for films and events, but the *shuro* rope for the models was painful (laughs). (Keibunsha Co., 1997, p.390, my translation[286])

In the *Return of Godzilla* (1984), Shinji Higuchi says: "In the special effects department, I did the wiring to make the island glow." (Haraguchi, 2021, p.107, my translation[287]). Shinji Higuchi also was hired by the Art Department, "where I became Yasuyuki Inoue's assistant." (Haraguchi, 2021, p.107, my translation[288]). Basically, Higuchi helped and assisted Inoue in

[284] Movie entry details are described in Keibunsha Co. 1997, p.299.
[285] Mentioned in the interview Haraguchi, Tomoo (2021) *Tomoo Haraguchi and Shinji Higuchi special talk* (原口智生氏、樋口真嗣氏特別対談), p.107.
[286] "その頃、『さよならジュピター』(84 年・東宝)が作られて、これで日本の特撮が変わる!と思って、学校さぼって東宝の撮影所に入り 浸っていたんです。それからずるずると現場に入っていくようになり、84 年の復活『ゴジラ』には造型のアルバイトで現場に入っていました。その後も東宝特殊美術でバイトをしていて、映画やイベント用の造型物を作っていた んですが、造型用のシュロ縄が痛くって(笑)." Obs: The *shuro rope* is made of hemp palm making it a resistant material but difficult to work with.
[287] "樋口: 特殊効果部で、島を光らせるための配線をやりました."
[288] "特美で雇ってもらえることになり、井上泰幸さんの助手をやることになった."

making the miniature models, but it was repetitive work, so he eventually moved to the molding department to work helping make monsters. After shooting the movie, Higuchi was asked to organize the miniature storehouse: “I was asked to vacate half of the warehouse to store the miniatures used in *Godzilla* (84). I was also told to throw away what I didn't need from what was currently in there.” (Haraguchi, 2021, p.108, my translation[289]). This practice was common after shooting a movie, so Higuchi’s testimony attests to why there are no old miniatures preserved. Higuchi was warned that “Maniacs like you are not allowed to take them with you. (laughs).” (Haraguchi, 2021, p.108, my translation[290]). However, since it was going to be thrown away, Higuchi saved some miniatures. After that, he went to work on the Daicon Film.

For the *Eight-Headed Giant Serpent's Counterattack* effects, they first tried using a fishing line but since it was not strong enough, Higuchi came up with some ideas. “I thought piano wire would be better, but it wasn’t available in Osaka, so I went to Toho’s Manipulation Department and asked them for some. I also got fly ash because the dust wouldn’t settle on the cement.” (Keibunsha Co., 1997, p.390, my translation[291]). Fly ash is collected from the coal ash generated when coal is burnt in coal-fired power stations[292]. Since it is complementary to cement can be used in construction. The movie was an amateur production, but it gathered recognition and was received well. Hiroshi Yamaguchi would introduce Higuchi to Hideaki Anno at a Daicon film screening. Later Higuchi would also join Gainax while working on storyboards for tokusatsu movies, for example, in *Peacock King* (孔雀王, 1988, Toho) and participating in *Ultra Q The Movie: Legend of the Stars*, 1990, directed by Akio Jissoji. However, talking about the transition between live-action to animation, Shinji Higuchi said: “With live-action, you have everyone working on one cut at a time, and then all the parts are finished at once, but with animation, you have dozens of cuts at once, and you lose staff little by little, so it’s a bit lonely.” (Animec Special Edition Gainax, 1987, p.27, my translation[293]).

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[289] “『ゴジラ('84)』で 使ったミニチュアを収納するために、倉庫を半分空けろと。今、入っているものから、いらない物は捨てるようにと言わ れたんです.”

[290] “「お前みたいなマニアは、持っていったらダメだぞ」と釘を刺されました (笑)。”

[291] “それはピアノ線のほうがいいだろうと思ったんですが、大阪では手に入らないので、東宝の操演部に行って分けてもらったりしました。埃がセメントではうまくいかないからとフライ・アッシュもら行ったり.”

[292] While coal was the major fuel in Japan for decades, in the 1960s because they were concerned with the high price of energy, they started to move to a more economic oil. This caused the oil shock economical problem in the 70s. However, the rapid industrialization resulting from high economic growth generated pollution concerns, also into the 80s. See Nemetz, P. N., et al. “Japan’s Energy Strategy at the Crossroads.” Pacific Affairs, vol.57, no. 4, 1984, pp.553–76. https://doi.org/10.2307/2758709. (Accessed: 2022.05.06)

[293] “実写だと、1 カット 1 カットに全員が集中してかかり、最後はパーツと一斉に終わるわけですが、アニメだと数十カット一度にかかって、少しずつスタッフが減りますから、少し寂しい感じもしますね.”

Gainax was founded in December of 1984, and while it is beginnings, Hideaki Anno would work animating for *Nausicaä of the Valley of the Wind* (風の谷のナウシカ, 1984), directed and written by Hayao Miyazaki. Anno was entrusted with the *Giant Warrior scene*, where warrior is dissolving and shooting beams at the climactic action of the animation. Anno worked also on *Angel's Egg* (天使のたまご, 1985) directed by Mamoru Oshii, among many other works. The first Gainax animation project was *Royal Space Force: The Wings of Honneamise* (王立宇宙軍~オネアミスの翼, 1987) directed by Hiroyuki Yamaga. In an interview for Animec, Hideaki Anno said how he proceeded with animation: "I'm trying to create something different from conventional expressions. Well, my goal is *Space Battleship Yamato* (laughs)." (Animec Special Edition Gainax, 1987, p.30, my translation[294]).

In 2016, Mamoru Oshii gave an interview about realizing and directing his project *Garm Wars: The Last Druid* (ガルム・ウォーズ, 2014). The original project was developed in 2000, but it was only realized years later as a Canadian & Japanese project that mixes live action and animation in a sci-fi fantasy. Oshii is notorious for creating new spaces, and in this work, he attempted to mix live action and CG in a way that becomes difficult to tell the difference, expanding the limits of live action. To recreate a space that doesn't exist yet, and constructed by assembling different elements, Oshii reflects on some of the inspirations for his project: "There are only a handful of films that have managed to pull off a full-fledged otherworldly fantasy. In the case of animation, it could be *Nausicaa* or *Royal Space Force*." (Animate Times, 2016, my translation[295]).

However, *Royal Space Force* did not receive such a good response at the time, being a science-fiction fantasy with mainly male characters. From 1988 to 1989, the release of six episodes of OVA *Gunbuster*, or in Japanese *Toppu o Nerae*! Becoming *Aim for the Top*! (トップをねらえ!), was Hideaki Anno's debut as a director[296]. The OVA short series mixes mainly three elements, beautiful fighting girls, robots, and sports. The animation plot starts with the space fleet Rukushion

[294] "従来の表現とは一線を画したものを。まあ僕の目指しているのは宇宙戦艦ヤマトですから(笑)."
[295] "本格的な異世界ファンタジーをちゃんとやりきれたフィルムなんて数えるほどしかない。アニメなら『ナウシカ』だったり『王立宇宙軍』だったり."
[296] Before this OVA production, Anno had directed some commercials, such as 'ビクター ハイパー・ロボットコンポ CM' (1987, JVC ケンウッド) and'夢幻戦士ヴァリス CM/PV' (1987, SUNSOFT) among other short animations in his career. This and other primarily unknown productions were part of Japan's 2014 Tokyo International Film Festival screening line-up. See https://anime.eiga.com/tiff/lineup/ (Accessed 2022.05.04).

being annihilated by space monsters. Years later, Noriko Takaya, the daughter of the space fleet's deceased captain, enters a pilot training school in Okinawa. Noriko struggles but eventually becomes a space pilot with the genius Kazumi Amano. The *Gunbuster* is a mecha formed by combining Buster Machine One and Two, which Noriko and Amano pilot. As they engage in real battles in space, the time differential between Earth and space means they remain younger while many years have passed on Earth.

The series title indirectly pays homage to the classic *shojo* (girls) manga *Aim for the Ace* (エースをねらえ! 1973-1980), published by Sumika Yamamoto in the magazine Margaret. At the end of the eighties, the girl's genre was popular, and its elements started to be adopted in robot anime. Toshio Okada, Shinji Higuchi, Mahiro Maeda, and Yoshiyuki Sadamoto planned and developed the series, and later Hideaki Anno joined to direct the project. Haruhiko Mikimoto that made the character's design for *Macross* and *Megazone 23* was invited to create Gunbuster's design, and Kazutaka Miyatake and Koichi Ohata made the mechanical design. The first episode is about gags set in the school in a loose atmosphere. Still, in the final episode, it rapidly scales up to a glorious battle for the survival of the earth, and the atmosphere becomes an entirely different work. They released the OVA episodes in videocassettes and were acclaimed in content and commercial revenue.

For *Nadia: The Secret of Blue Water* (ふしぎの海のナディア, 1990-1991), studio Gainax was asked to produce a project based on the sci-fi novel *Twenty Thousand Leagues Under the Sea*. The chief director was Hideaki Anno, and later Shinji Higuchi also became a director of the series. It was the production that made Gainax studio gain recognition since, before this animation, only a few numbers of fans knew about this endeavor. "Deliberately incorporating homages to anime and special effects that the main staff had seen and enjoyed, it transcended the conventions of TV anime and drew significant attention, becoming a popular hit frequently featured in anime magazines." (The National Art Center, 2021, p.219). Besides the newly gained popularity, the series production costs made Gainax enter into debt. The program ran on NHK, making it possible for the studio to find sponsors, but even so, the studio was not generating profit. This was also a period when Gainax started a gaming department, producing figure actions for *Dragon Quest* and slowly building up a team dedicated to PC games. "Truth be told, our total enthusiasm also drove us for CG. Unlike the editorial department, our gaming department never went belly-up." (Takeda, 2005, p.143)

The first products mainly were quiz games featuring original characters made by Takami Akai. One the success of this strategy was the game released in 1989 called *Cybernetic Highschool* (電脳学園) for the PC-8800 series and the PC-9800 series. It is an undressing game in which the heroine gradually removes her clothes and finally becomes completely naked when the quiz is answered correctly. In the 1990s, Gainax released the PC-9801 game, *Silent Möbius*, adapted from the original manga of the same name. In 1991, they released the adventure card battle game *Battle Skin Panic* (バトルスキンパニック). One of Takami Akai's successful games was *Princess Maker* (プリンセスメーカー, 1991). The game was the first social or life simulation style of raising and interacting with a virtual character developed for multiple video game platforms. This genre would develop into erotic games and all sorts of interactions with virtual characters that have been popular since then.

In 1991, they also released two episodes of OVA *Otaku no Bideo* (おたくのビデオ) a drama showing the development of the term otaku and their lifestyle in the 1980s. Besides being produced to overcome some of Gainax's debt, it was also created in response to the Tokyo-Saitama serial child abduction and murder cases that occurred successively in Saitama Prefecture and Tokyo between 1988 and 1989. Because the perpetrator, Tsutomu Miyazaki, collected many items, he was named an otaku, bringing a dark image to the term, which caused social stigmatization to anyone that used the term. In a way, the OVA was an attempt to tell the story of what otaku meant and included aspects of Gainax's trajectory. It also included a live-action segment called *Portrait of an Otaku*, a fake documentary, and interviews about otaku. Also, Gainax hoped to expand its market; it held a convention dubbed Animecon in America, with Japanese and American staff working in the event. "To us, it didn't matter if it was via garage kits or anime; we just wanted to start getting our products overseas." (Takeda, 2005, p.146).

The changes in the social environment of animation production, coupled with the cyberpunk movement, the development of computers, and the internet, would make the soil for the growth of flesh and machine-rebuilding narratives that reshaped the robot anime genre and the understanding of machine interiority.

5.1. Flesh and Machine

In 1982, Katsuhiro Otomo released his manga *Akira*, and Ridley Scott released his movie *Blade Runner* (1982), which was filled with perceived Japanese elements. The cyberpunk literature movement was inspired by New Wave writers like J.G. Ballard and Samuel R. Delany and postmodern writers like William S. Burroughs. In the eighties, the context of a postindustrial and late capitalist society shaped a generation of writers portraying a shattered culture. The antiheroes drift in society, where there are no communal bonds and distrust of authorities. William Gibson, with his novels *Neuromancer* (1984), *Count Zero* (1986), and later *Mona Lisa Overdrive* (1988), set the tone of the genre, together with Bruce Sterling, Emma Effinger, and others.

"Antifoundational, skeptical of authority, suspicious about the possibility of human autonomy, and fascinated by the way technology and material objects shape consciousness and motivate behavior, cyberpunk would seem to square with postmodern culture (…)." (Sponsler, 1992, p.627). In this sense, the cyberpunk movement also approaches the boundary transgression between the organic and inorganic, the human and the machine. The decentering of the human is brought by the technologies that enhance and overtake the body. In these narratives, not only do humans become machine-like, but also machines assume human-like characteristics.

Since the economic boom in the eighties and the rapid transition to the economic market, "William Gibson's *Neuromancer* is perhaps the first work of SF to explicitly posit Japan as what Gibson would later call the world's "default setting for the future" (Modern Boys)." (Paulk, 2011, p.481). Japanese technology and iconography are used in the novel, in a way, evoking a techno-orientalist mode. From1987 through 1988, cyberpunk peaked in its popularity in Japan, being discussed in magazines and journals of SF. "In the spring of 1988, Gibson's and Sterling's respective visits to Japan further promoted the excitement, nicely coinciding with the publication of the Japanese versions of *Schismatrix* and *Mirrorshades*, translated by Takashi Ogawa, the Tokyo liaison of cyberpunk." (Tatsumi, 2006, p.109).

In 1982, Otomo Katsuhiro began to release his manga *Akira,* utilizing elements of the cyberpunk genre, such as political turmoil of corruption and power, social isolation, drug abuse, and the cybernetic world and psychic energies that would be entangled in dilemmas of how to coexist in society. Otomo also directed and released the anime adaption of *Akira* (1988), bringing

horror, apocalypse, and the technological transformation of the body into a full-fledged visual experience. The animation also came when the country peaked in the economic scenario of international influence.

The metamorphosis of Tetsuo, from a human to a monstrous creature, reflects his passage from a helpless creature to a powerful position. The 80s also mark the imagery of anime mecha, focusing on the human flesh and its narratives inside the machine. Or rather, about the new subjectivities that can arise from technological fusion. Or rather the unexpected mental changes that are invisible but pervasive once the technology becomes a society mode of existing in all its spheres. "Looking like a giant fetus-like amoeba, devouring anything that is a potential food source, Tetsuo represents the power of life, incorporating life through the unavoidable evolutionary processes of natural selection, mutation, and adaptation." (Brown, 2010, p.8). The horror genre also captured the violation of technology in the human body in the live-action movie *Tetsuo: The Iron Man* (鉄男, 1989), directed by Shinya Tsukamoto. There is no doubt that the name of the cyborg tribe, *Tetsuo*, which means *iron man*, derives from that of the psychic protagonist of *Akira*.

The early 1990s were marked by an economic bubble with increased monetary inflation. While apocalyptic narratives were based on linear time, the postmodern apocalypse time of the 1980s and 1990s began to incorporate multiple timelines into fictional space. The security that the 80s provided regarding economic stability and a sense of national unity started to show worrisome signs. On January 17, 1995, the great Hanshin earthquake, also known as the Kobe earthquake, was the first major environmental disaster since 1923. Two months later, on 20 March 1995, during the morning rush hour, the Aum Shinrikyo group caused the Subway Sarin Incident on the Tokyo Metro system. This obscure religious group believed the world was about to end. The cult members left bags with sarin, a nerve agent developed by the Nazis, inside the trains. Five coordinated attacks on the trains in Kasumigaseki and Nagatacho stations were close to the Japanese government. "It is a remarkable coincidence that *Neon Genesis Evangelion*, an apocalyptic science fiction anime and one of the most influential animations in contemporary Japan, was released shortly after the major apocalyptic events of 1995." (Tanaka, 2011, p.111).

The fiction after 1995 does not seem to adhere to the linear timeline, but neither is there a sacred center where the story surrounds it. The crisis would give room for creating a new apocalyptic motif within the animation and manga, the *Sekaikei* genre, which translated means the reason for the crisis in the world.

The main animation of the genre is undoubtedly *Neon Genesis Evangelion*, that while it contains the *mecha* characteristics, it ends up deconstructing them since family dysfunctions permeate the confrontations and mystical and post-apocalyptic relations accompanied by surreal images. “In sekaikei stories, though, there are neither illustrations nor descriptions of enemies: we never know what they are, what they look like, and why they attack, just that they bring an end-of-the-world crisis.” (Tanaka, 2011, p.167). Similar to *Evangelion*, Oshii Mamoru's *Ghost in the Shell* animation (both are part of the animation analysis of this research) also turns to the possibilities of encounters between the mechanic and the organic or, as Napier suggests: “Philosophical questions as to whether one can possess a soul in the increasingly technological age.” (Napier, 2005, p.104).

In a broad sense, while *Evangelion* privileges emotional detachment and solitude, *Ghost in the Shell* explores the possibilities of psychic connections through technological means. Within the science fiction genre, we can see that from the 2000s, there has been an exponential increase in this type of narrative, marking the fall of the grand narratives in favor of multiplanar lines of time. However, the crisis also offers an opportunity for reflection. So as much as these works reflected elements of this period, the artists emerged with questions for the viewer instead of providing direct answers in the narrative.

5.2 The New Century Evangelion

Besides the original series *Neon Genesis Evangelion* (1995), two long-running animated films with alternative endings were produced: *Death & Rebirth* (1997) and *The End of Evangelion* (1997). The Evangelion franchise also includes a tetralogy of animations called *Rebuild of Evangelion* that recounts the facts of the original TV series in an alternate form. The animations are: *Rebuild of Evangelion 1.0: You Are (Not)* Alone (2007), *Rebuild of Evangelion 2.0: You Can (Not) Advance* (2009), *Rebuild of Evangelion 3.0: You Can (Not) Redo* (2012) and the fourth and last with the title *Evangelion: 3.0+1.0 Thrice Upon a Time* (2021).

With all started when Anno agreed to a collaboration between King Records and Gainax while drinking with Toshimichi Otsuki, which promised a time slot for the production. It took around a year from the planning to start broadcasting the series. "I don't think it's necessary to restate what a tremendous sensation *Evangelion* caused when it started airing on TV. They called it a social phenomenon. (…). That's the *Evangelion* everybody knows, but it sure wasn't smooth sailing for us during the production phase." (Takeda, 2005, p.166). First, the innovation of utilizing a humanoid figure for the robot's design made it difficult to find a toy company that would sponsor the series. "Production companies refused to help with the production of the animation." (Takeda, 2005, p.167). It was considered risky since it had an unorthodox design and narrative approach.

In an interview, Hideaki Anno explains the existence of the perfect score and how it's related to the series. When you make no mistake, you will get rewarded 100 points. Under different circumstances of education, one could achieve 100 or 200 points. However, in his view, the people that earn 200 points are not estimated or evaluated in Japan. Ultimately, Anno points to the crisis of the self within society that lingered at the beginning of the 90s in the social sphere.

> I wanted to make it so that there were as many answers as there were people who came up with it. The answer isn't something we'll prepare; everyone can come up with answers, which is okay. As it is now, I feel that at that time, imaginative power was steadily disappearing from society. It's overwhelmingly easier not to think for yourself. However,

> I believe that everyone should have the pleasure of imagining. That's why I left room for imagination in the product." (Hotta; Gainax, 2005, p.83, my translation[297])

In Anno's way of conceiving *Evangelion's* narrative conception, he says that he left a black box like a puzzle and undefined parts so that people can find multiple answers and interpretations. It also allowed fans to speculate and create their theories and relationship with this narrative. "As long as human beings are in the world, they are living through some kind of *craftmanship*. There is always a relationship between sender and receiver. However, it is never a one-way relationship." (Hikawa, 2000, p.9, my translation[298]). Hikawa finds that craftmanship (ものづくり), or the art of making things, helps connects people. The relationship between sender and receiver is a way to connect and communicate, and then the receiver can also create their crafts and send it back again. The movement between the creator and the otaku fan evolved in collaboration towards getting involved and spreading the artistic craftsmanship of different media aspects.

In the line of robot anime style, it could be said that *Evangelion* is in a direct line of heritage with *Yamato* and *Gundam*. Hideaki Anno was a fan of both animations, but he sees *Evangelion* in a different light. "I feel that my attachment to *Yamato* and *Gundam* or the desire to surpass them has subsided. It is a kind of resignation. I feel that I can't beat *Yamato* and *Gundam* as they are." (Hotta; Gainax, 2005, p.88, my translation[299]). One of the things that *Yamato*, *Gundam*, and *Evangelion* share in common is that they made poor figures on airtime and only became famous later on with fans support. But what ultimately made them so important was that they created an antithesis or a new idea of how to represent and create a narrative capable of transmitting the sense of their time. Hikawa (2000) points out that the main character Hikari Shinji in *Evangelion* is named after one of Anno's colleagues, Higuchi Shinji. "Anno and Higuchi's common visual sensibility has its roots in the special effects films of the 1960s. Specifically, the Toho special effects films by Eiji Tsuburaya, Tsuburaya Productions works such as *Ultraman* (1967), and G.

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297 "「エヴァ」のときは、そういう風潮の中で、与えられたものすべてに答えがあるという感覚はいかがなものかと考えていました。思いついた人の分だけ答えがあるようなものにしたかったんですよ。答えはこちらが用意するものではなく、皆さんの中にあるものすべてがオッケーと。今もそうですけど、その頃はどんどん想像力というものが社会から欠落していったと感じています。自分で考えないほうが、圧倒的にラクですから。しかし想像する快楽っていうものも、誰にでもあるはずだと思うんですよ。だから作品の中に想像する余地を残したんです."

298 "人間は世の中にいる以上、なんらかの「ものづくり」をして生きています。そこに は必ず送り手・受け手、という関係があります。しかし、一方向のものでは決してありません."

299 "「ヤマト」や「ガンダム」とかに対する思い入れというか、超えたいという気持ちは僕の中で今、沈静化している気がします。一種、諦めみたいなものかと。「ヤマト」「ガンダム」には、このままでは勝てないという思いですね."

Anderson *Thunderbirds* (released in Japan in 1967)." (Hikawa, 2000, p.106, my translation[300]). These shows and others mentioned have been the source of art or techne inspiration for *Evangelion*. The people that created the animation were part of the amateur fan culture that rose in the 80s, and at the end of the 90s had emerged with their aesthetic approach.

Perhaps that is why when Hikawa is writing in the 2000s, at the fever of *Evangelion*, he asks in his book, why so few people were approaching discussions from the point of view of anime's history and from the creator's perspective. Because Evangelion's narrative was built like a puzzle, the discussions at the time seemed to have lingered towards using Evangelion as a topic and utilizing different fields of expertise to create theories surrounding the work. Something that Hikawa (2000, p.115) said led to *an essay without the work*. In Hikawa's view despite the meteoric success of the series even in a period of economic recession, not many works analyzed the otaku approach in *Evangelion*.

Perhaps the term itself, *otaku*, became problematic in many ways, and its social and DIY importance inside of Japanese media culture was and is often underestimated and misunderstood. The economic success of *Evangelion* in the 2000s was estimated to be around 40 billion yen, which has increased significantly following the theatrical movies release and the end of the *Rebuild* series of movies in 2021. The last movie *Evangelion: 3.0+1.0 Thrice Upon a Time* (シン・エヴァンゲリオン劇場版:||, 2021) generated an average of 10 billion yen at the box office alone. "In other words, director Anno Hideaki himself took otaku practices as his starting point and created *Eva* with a thorough knowledge of what otaku responds to, which is why it became a hit. The original reason for this is that the generation of otaku, which is roughly the same age as the 35-year history of TV animation, has grown up to assume leadership in industry and the media." (Hikawa, 2000, p.116, my translation[301]). Of course, this does not mean that the complexity of otaku structures can be easily grasped or understood in the multiple layers that have evolved. However, without the cultivation of sharing the know-how, the transmission of DIY techniques built out of necessity, and the cross-collaboration between artists and their otaku/fan admirers that organized themselves in communities, these shows would not have created such a social impact in Japanese Media.

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[300] "庵野・樋口に共通した映像感覚のルーツは昭和 40 年代の特撮作品群だ。具体的には円谷英二の東宝特撮映画、「ウルトラマン」(1967 年)に代表される円谷プロ作品、そしてイギリスの『サンダーバード』(日本公開 1967 年)などG・アンダーソンの作品だ."

[301] "つまり、庵野秀明監督自身がオタク的なものを出発点に置き、オタクが何に反応するかを熟知してエヴァをつくったからこそヒットしたこと、ニュース種になるのはテレビアニメ 35 年史とほぼ同い年のオタク世代が産業界、マスコミ界でリーダーシップを取る年代に成長しているのが原因であること."

Figure 14 Explosion by Hideaki Anno in Daicon IV (left) original drawing (right) celluloid sheet[302]

Figure 15 Royal Space Force: The Wings of Honnêamise (1987) (left) original drawings of each cell, color-coded and transferred onto transparent material and overlaid). (right) still image and the final result[303]

[302] Image reference from *Hideaki Anno Exhibition* catalog, 2021, p.116-117.
[303] Image reference from *Hideaki Anno Exhibition* catalog, 2021, p.178.

Figure 16 Hideaki Anno as Ultraman in Daicon Return of Ultraman (1983)[304]

Figure 17 Evangelion: 1.0 You are (Not) Alone 2007[305]

[304] Photography taken by the author at the *Hideaki Anno Exhibition* (2021).
[305] Still-image from: 'エヴァンゲリヲン新劇場版:序 (EVANGELION:1.11) YOU ARE (NOT) ALONE スペシャルエディション アニメ' (2008). Hideaki Anno (dir. et al). Japan: Funimation, (97 min) (DVD).

In a sense, *Evangelion* was the result of careful explosion effects from his *Daicon Film* (see Figure 14) era to a professional start (Figure 15), to his love for tokusatsu and miniatures (see Figure 16) combined that came forward. Additionally, Evangelion was a mirror reflecting the otaku audience. The intervention of otaku perception is made in the flow of the image and remains in this flow, i.e., the possibility of an image where there is no world out there and where the referent is not important. “Evangelion multiplies frames of reference to the point where viewers no longer know exactly which frame of reference is the frame of reference, or if there is a frame of reference for the series.” (Lamarre, 2009, p.165). If Anno wanted people to find their answers, he achieved by creating an engagement like never before between creators and fans. It also introduced a new way anime fans could enjoy by relentlessly examining the framework between fiction and reality. Additionally, *Evangelion* brought the humanoid robot to the forefront of the robot anime genre.

For the *Rebuild of Evangelion,* Anno created a new studio *Khara Inc.* and decided to embrace digital video work steadily. This was the first step towards creating a new visual style and production process. The mixture of analog tokusatsu, effect animation techniques, and live-action experience would continue to shape his work well into its digital and analog combinations in the following decades of the twentieth century.

5.3. Digital Animation

Blue Submarine No. 6 (青の 6 号) is an OVA released between 1998 and 2000, produced by Bandai Visual, Toshiba EMI, and GONZO, the studio responsible for the animation. Shoji Murahama, that worked in Daicon Films and Gainax, was one of the founding members and producers. After participating as an animator for *Nadia: The Secret of Blue Water* in 1992, he left Gainax. In the same year, he founded Gonzo studios with Shinji Higuchi, Mahiro Maeda, and Hiroshi Yamaguchi. Gonzo started adopting digital image technology and has provided innovative images that were not bound by conventional methods. The video game industry motivated the early adoption of digital production, as it was in the case of Yoshinori Kanada and other animators. Shoji Murahama, in an interview, reveals that he saw an opportunity to create a new studio.

> That's when I realized that the market for digital animation using games as a medium was about to explode, and I decided to set up a digital animation studio. I thought that if I could revolutionize animation production, not only in terms of the appearance of the images but also in terms of the production process, by introducing new digital technology and human resources in that field, I could change the situation where *animation is unprofitable*. (Hotta; Gainax, 2005, p.287, my translation[306])

In the second half of the nineties, animators were migrating to the video game industry and working for American companies. When Gonzo studio started, besides not having the necessary technology or infrastructure, they didn't have artists trained or prepared for them. Hence, they taught upcoming students or people that had some experience in-house. They had to create the digital images locally and invest in buying the equipment, so they had to target productions that gave a capital return to sustain the studio. They started animating for video games, and in 1996, they worked on *Lunar: Silver Star Story Complete*, released by PlayStation and Saga. After that,

[306] "そこで「ゲームを媒体としたデジタルアニメの市場が爆発するぞ、こりゃ」と感じてデジタルアニメのスタジオをつくろうと考えたんですよ。デジタルという新しい技術とその分野の人材を導入することで、映像の見た目はもちろん、制作のプロセスまでを含めてアニメ制作を革新することができれば、「アニメは食えない」という状況を変えられるんじゃないかと考えていたんです。しかしそれは、簡単には実現できませんでした."

they were able to get more work in video games, but they also had to make original animation work.

> I wanted to make a very unusual film so that people would recognize it as *Blue No. 6 = Gonzo*. The second was to create the film fully digitally, using the digital animation technology that Gonzo had been working on up to that point. The backgrounds and original drawings were done by hand, but the rest of the process was all worked with data via the network. Editing was also done digitally. Digital from start to finish. (Hotta; Gainax, 2005, p.289, my translation[307])

The studio strategy worked and the promotion of being Japan's first full-scale digital animation made the director, Mahiro Maeda, and studio Gonzo widely known. In fact, attempts to produce digital animation were already present in the 80s; in some small parts or being used in research laboratories, however, due to high cost it was never fully used in animation productions. "However, at that time, the old film *Golgo 13* (1983) cost hundreds of millions of yen for CG or tens of millions of yen for 30 seconds, and people still had this image of digital animation." (Hotta; Gainax, 2005, p.287, my translation[308]). In 1995, an animated series called *Bit the Cupid* (ビット・ザ・キューピッド) was released utilizing a mix of CGI scenes and traditional animation. However, the difference was that *Blue No. 6* produced a more coherent unified image. The CG was used mostly in the background, and parts that were digital were used still left with a feeling of the 2D.

Companies also started to digitalize old versions, with the animation and backgrounds being hand-drawn, while the painting and filming were done digitally. That led Hikawa to think about the possibility that celluloid animation would become a rare sight in the 21st century. "In the 21st century, will there be publicity saying, "Dare to use the cell animation method of the last century to create a handmade taste!" (Hikawa, 2000, p.123, my translation[309]). Of course, the

[307] "「青 6」=ゴンゾ ゴンゾ=「青 6」と、認知してもらうために、とんでもなく変わった作品をつくろうと考えていました。もうひとつは、ゴンゾがそれまで取り組んできたデジタルアニメの技術を投入して、フルデジタルでつくること。背景や原画は手で描いていますが、そのあとのプロセスは全部ネットワークを介してデータで作業しています。編集もデジタルで行った。最初から最後までデジタル."

[308] "しかし当時はまだ、昔の映画「ゴルゴ 13」(83)では CG に何億円も使ったとか、30 秒で何千万円使ったとか、デジタルアニメについてそういうイメージを引きずっていた時代でした."

[309] "21 世紀には「手作りの味を出すために、あえて前世紀のセルアニメ手法を使用!」という宣伝文句も出るだろうか."

digitalization of animation production also caused some issues. Because the colors were directly converted into video signals, which made the colors unusually clear, if they were remastering an old animation, that meant that without knowledge of the original production, the colors might differ between the original and digital remaster.

"Some images used morphing to smoothly depict deformation or ripple filters to express spatial curvature to increase the degree of freedom. It was widely used in robot and SF animations, especially in Sunrise productions, such as *King of the Braves Gaogaigar* and *Cowboy Bebop*." (Hikawa, 2000, p.123, my translation[310]). Another point is that digital images made things clear and easy to spot on the screen. In contrast, in celluloid animation, it was possible to produce a myriad of animation effects by smudging the brush on the cel, utilizing hands and fingers to create smoke effects, and so on. However, digitalization also presented some new aesthetic choices.

Figure 18 Blue Submarine No. 6, Episode 1: BLUES[311]

[310] "モフィングを使って変形をスムースに描写したり、空間湾曲の表現を波紋フィルタで 行なったりして自由度を上げた映像も登場した。特にサンライズ作品では「勇者王ガオガイガー』や『カウボーイビバップ』など、ロボット、SF アニメで多用されている."

[311] Still-image from: '*Blue Submarine No. 6* (青の 6 号)' (2010) Masahiro Maeda. Japan: Bandai Visual, (2h37min) (Blu-ray box).

In 2006, *Blue Submarine No. 6* was released in the DVD version with all OVAs compiled. In the first episode, named *Blues*, humans are haunted by a race of sea mutants. The last hope lies with *Blue Submarine No. 6* and its crew fighting for survival. In Figure 18, the first thing to notice is the integration between 3D backgrounds and effects with the 2D celluloid characters. This successful strategy indicated a possible path in image aesthetics that creators could apply. Since it kept the overall feeling of the traditional celluloid in the main characters, there was no complete aesthetic shock. The strategy of *Blue Submarine No. 6 = Gonzo* worked but gave the impulse for artists to look at digital possibilities. Digital animation, in a sense, was still a new field that artists were exploring. Analog or traditional methods had been long tested, and so they were more reliable. However, the innovative approaches towards digital animation would come from the animators that had been accumulating know-how and saw a need to adapt their methodologies to the new era ahead. The impact of digital media in animation also entered the field of tokusatsu. In the first decade of the 2000s, the changes in image composition were powered by long-time animators.

5.3.1 Itano Circus in 3D

Itano became known for his aesthetic style, especially the *Itano Circus*, a careful depiction of missile trajectories and differentiated explosions. Besides his work, the animator helped create a new generation of animators. While working at Artland and Artland 3[312], his juniors Yuki Nobuteru and Toshiaki Hontani decided to leave the studio and asked Itano about joining them in creating a new animation space. Itano gave an interview for the Macross Ace magazine explaining his motivation to start his DAST studio. "When you're told like that by your juniors, you have no choice but to stand on your own shoulders. So, I created DAST." (Macross Ace, 2011, para.4, my translation[313]).

Since its formation, the studio has been involved in the production of numerous animations, games, and other films. The name is an acronym for *Defense Animation Special Team* (ディフェンス･アニメーション・スペシャル・チーム). In this sense, the name has a similar feel to that of Tsuburaya Productions, the Defense Force, but it also has the double meaning of dust, i.e., rubbish. Eventually, Itano taught some of the staff members of the GONZO CG team and Graphinica studio. Even though the studio disbanded in 2011, Itano said: "The people I taught are going to the frontline and doing more and more. I hope that Tokusatsu and everything else will continue to expand." (Macross Ace, 2011, para.16, my translation[314]). Itano's pioneering use of 3D CGI started in the animation field and expanded to tokusatsu.

Itano worked in the original *Macross*, and it would be in the OVA *Macross Plus*, 1994-1995, that he gradually started utilizing 3D CGI. In the OVA, the 3D was used as a substitute for background animation, in other words, as a representation prop. For *Macross Zero* (2002-2004), Itano gradually increased the proportions between 3D CGI and 2D, with most of the battle scenes being made utilizing 3D CGI. Since Itano was an experienced animator and mentor, he realized that the 2D production system needed to be adapted to accommodate new technology methods.

[312] *Artland 1* (located in Takadanobaba) was the head office, and *Artland 2* (Okubo) was the background team. *Artland 3* was where people who worked at Anime Friend and some freelancers used to work, so it was a mixed environment. It was located in a flat in Kichijoji.
[313] "後輩からそういう風に言われたら自分が背負って立つしかないじゃないですか。で、DAST を作りました."
[314] "自分が教えた人たちがどんどん前線に行ってやってくれるんで。特撮でも何でもどんどん広がっていけばいいと思っています."

“Itano: I was surprised at the generation gap when more and more young animators started saying that they didn’t want to draw hard things.” (Noguchi, 2014, para.3, my translation[315]). In the 80s and beginning of the 90s, the animation system relied heavily on drawing abilities, and as such, the work was concentrated on the best author animators. With increasing demands to develop high skills with working hours leading to exhaustion and financial hardship, several animators seemed tired of developing complex mechanisms for robot animation.

For example, while animating for *Ideon* and *Macross*, Itano drew everything on one piece of celluloid and then stacked around 4.000 sheets to move the layers, creating the animation. However, this type of work experience has become rare, partly due to economic reasons. Itano sees that hiring overseas services comes at a heavy cost for the new generation of artists. Furthermore, most animators are paid by piece rate, so the animators strategize to make a living more than developing an artistic ability.

> That is why the generation of that time still supports the industry. The more original drawings by people who are good at movement, the more moving pictures they have, so they send them overseas, including the finishing touches. On the other hand, young Japanese are asked to only clean up still pictures out of politeness. Since they do not have a chance to experience good original motion pictures, they do not develop a sense of motion. (Noguchi, 2014, para.11, my translation[316])

Even though the *Cool Japan Strategy* was initiated by the Japanese Ministry of Foreign Affairs (MOFA), animators working conditions still need improvement. The challenges of creating a sustainable environment for artists have recently sparked discussions. In 2021, journalist Rei Nakafuji published article[317] about the seriousness of the “Japan-China reversal” in animation production. Chinese animators earning power and working conditions seem to double the average earning in Japan, shifting subcontractor power. The survey[318], published by the Japan Animation

[315] “板野:「大変なものを描くのが嫌だ」という若いアニメーターが増えてきて、ジェネレーションギャップに驚きましたね.”
[316] “だから未だに当時の世代が業界を支えているのです。動きの上手い人の原画ほど動画枚数が多くなるので、仕上げも含めて海外に出してしまう。一方で、日本人は丁寧だからという理由で、国内の若手は綺麗な止め絵のクリーンアップばかりを依頼される。良い動きの原画に触れるチャンスがないから、動きのセンスが養われない.”
[317] Nakafuji, Rei. (中藤 玲). (2021) ‘The seriousness of the “Japan-China reversal” in animation production. Japan has become a subcontractor to China’ (日本人なら中国人の３分の１で済む」アニメ制作で進む"日中逆転"の深刻さ。日本が中国の下請けになっている). President Online. Available at: https://president.jp/articles/-/44767 (Accessed 2022.07.02.)
[318] JAniCA 2019 survey. Available at: http://www.janica.jp/survey/survey2019Report.pdf (Accessed 2022.04.02.)

Creators Association (JAniCA), shows that the activity that provided the most income was that of original creation made by key animator (JAniCA, 2019, p.19). The report also signalizes long working hours, few rest days, and low wages across different categories of art creation (JAniCA, p.44, 2019).

"Itano: Yes. I thought someone had to be a pioneer and show Japanimation using 3DCG. Otherwise, people would get caught up in the belief that it is impossible and not try to do it." (Noguchi, 2014, para.12, my translation[319]). Itano's approach is that by implementing 3D CGI, animators can develop a sense of layout and composition and, from there, create an aesthetic practice. "But 3DCG would be more reliable if it were led by someone who could convey the lens effects of Japanimation and the deformation of space and time axes. I wanted to prove that, so I trained Tsuburaya Productions CG and compositing teams from scratch on the *Ultraman* series." (Noguchi, 2014, para.25, my translation[320]). Itano's participation in *Ultraman resulted from* his seminars teaching 3D to numerous people working in the industry. In one of his teaching seminars, the animator Haruhiko Mikimoto and director Kazuya Konaka participated, and years later, Konaka invited Itano to join the movie project *Ultraman: The Next* (ULTRAMAN, 2004).

At that time, people in charge of tokusatsu manipulation did not have experience with CG since the standard was to utilize miniatures. Because of his experience as an animator while teaching the new generation, Itano became the flying sequence director (see Figure 19) as he explains in this interview:

> I was given the title of *Flying Sequence Director* in the credits, as I was responsible for the flying scenes. The aerial battle between *Ultraman* and *The One* at the end was more CG, but between the CG cuts, they also did live-action shooting, which I attended. I was also present during the filming of the CG cut and when the CG cut was combined with the live-action cut. (Oguro, 2005, my translation[321])

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[319] "板野: はい。誰かがパイオニアになって、3DCG を使ったジャパニメーションを見せる必要があると思っていました。そうしないと、「無理だ」という思い込みに捕らわれて、みんなやろうとしないのですよ."

[320] "でもジャパニメーションのレンズ効果や、空間と時間軸のデフォルメを伝えられる人間が指導すれば、3DCG はもっと信頼されるようになる。それを証明したくて、一連の『ウルトラマン』シリーズでは円谷プロダクションの CG 班と合成班をイチから鍛えていきましたね."

[321] フライングのシーンの責任はとるという事でやっていたので、フライングシーケンスディレクターという肩書きでクレジットに出してもらいました。最後のウルトラマンとザ・ワンの空中戦はＣＧの方が多かったんですけど、ＣＧのカットとＣＧのカットの間に、実写で撮ったウルトラマンやザ・ワンが入るんです。そういった場合は、実写の撮影に立ち会いました。あるいは空舞台を撮ってもらってＣＧを合成する場合も、撮影に立ち会っています. Oguro,

Figure 19 Flying sequence in Ultraman: The Next, 2004[322]

They mixed live-action cuts and CG for this sequence, and Itano was responsible for achieving visual coherence. His pioneering use of 3D technology also appeared in the series *Ultraman Nexus* (2004), *Ultraman Max* (2005), and *Ultraman Mobius* (2006-2007). For the *Ultraman* series, which he worked on for three years between 2004 and 2006, Itano introduced the Itano Circus using 3DCG to the tokusatsu world. In *Figure 13*, the photos above left and below right show the flying sequence that Itano was responsible for. By utilizing CG, Itano was capable of transmitting his 'animation' style to live-action, helping in producing an *Ultraman* that could fly dynamically.

Yuichiro. (小黒祐一郎). (2005) '*Japanimation Technology Introduced in Tokusatsu: Interview with Ichiro Itano of ULTRAMAN'* Web Animation Magazine, see http://www.style fm/as/13_special/mini_050712.shtml (Accessed 2022.07.02.)

[322] Image reference from Oguro, 2005, see: http://www.style fm/as/13_special/mini_050712.shtml (Accessed 2022.07.02.)

5.3. Rebuilding Tokusatsu, Robot Anime Legacies, and Surviving Media

Matsumoto Hajime worked with Iizuka Sadao at Den Film Effects, and they contributed with optical effects for *Godzilla vs. King Ghidorah* (ゴジラ vs キングギドラ, Kazuki Ōmori, 1991). Den Film Effects started using digital technology for composition in *Kamen Rider ZO* (仮面ライダーZO, Keita Amemiya, 1993). From *Godzilla* (1954) to *Godzilla Final Wars* (ゴジラ FINAL WARS, Ryuhei Kitamura, 2004), the Godzilla and monsters characters were made with suitmation, in which the actor would embody the monster and use mainly optical composition for the effects. In the following five years, during the Heisei Gamera trilogy (1995-2006), there was a transition from optical compositing to digital compositing. "In the first Gamera film, the ratio of digital to optical was 3 to 7, but in the third film, the ratio was reversed to 9 to 1. From Whiteout (2000) onwards, all compositing was done digitally. Composition technology has changed dramatically in just five years." (Iizuka; Matsumoto, 2016, p.33, my translation[323]).

Gamera: Guardian of the Universe (ガメラ大怪獣空中決戦, Shusuke Kaneko, 1995) was the first film of the Heisei Gamera trilogy. To help redesign the monsters Gamera and Gyaos, they hired Mahiro Maeda and Shinji Higuchi of the animation studio GONZO. Tomoo Haraguchi was responsible for molding the suit with the new design elements. The studio GONZO was created by former members of Gainax Studios, Shoji Murahama, Hiroshi Yamaguchi, Mahiro Maeda, and Shinji Higuchi. Higuchi started working part-time, helping with miniatures and visual effects in *The Return of Godzilla* (ゴジラ, 1984). He also helped with storyboards for *Bye-bye Jupiter* (さよならジュピター, 1984, Sakyō Komatsu and Koji Hashimoto) before he joined Gainax animation studios and continued working sporadically in tokusatsu movies, such as *Ultra Q The Movie: Legend of the Stars* (ウルトラ Q ザ・ムービー 星の伝説, Akio Jissoji, 1990).

Gamera 2: Attack of Legion (ガメラ 2 レギオン襲来, 1996, Shusuke Kaneko), Mahiro Maeda and Shinji Higuchi were again in charge of designing *Gamera* and *Legion* monsters. In

[323] "ガメラ一作目では、デジタルとオプチカルの比が 3 対 7 だったのが、三作目では 9 対 1 に逆転した。作られた約五年間が、オプチカル合成からデジタル合成への移行期であった。「ホワイトアウト」(00 年)以降はすべてデジタル合成である。合成技術はわずか五年で大きく変わったのである."

addition to making the suits, they also used computer graphic elements under challenging scenes. In *Gamera 3: Revenge of Iris* (ガメラ 3 邪神〈イリス〉覚醒, 1999, Shusuke Kaneko), the ratio of composition of digital was 9 to 1 for optical composition. Studio GONZO was one of the first studios to utilize digital technologies in *Blue Submarine No.6*. The know-how of digital composition learned throughout the *Heisei Gamera* series also contributed to the animation field.

"The Japanese film industry was slow introducing a system to digitize original negatives. It was unclear how widespread the system would be, and it was expensive, so companies were cautious about introducing it." (Iizuka; Matsumoto, 2016, p.243, my translation[324]). The advances in digital technology made it possible to combine digital technology and film; for example, negative film is digitized with a scanner, and digitally edited images are re-recorded on film and shown in theatres. Nowadays, it is possible to go from shooting to screening without using film. Although the digital medium benefits production and cost reduction, the preservation of such productions has been widely discussed in the past two decades. These concerns were published in the two books called *Digital Dilemma* (2007) and *Digital Dilemma 2* (2012), published by the Academy of Motion Picture Arts and Sciences "But today, no media, hardware, or software exists that can reasonably assure long-term access to digital assets. A dynamic approach that anticipates failures and obsolescence will be essential." (A.M.P.A.S, 2007, p.13). That is why Katsuhisa Ohzeki wrote that films developed with motion pictures could integrate with digital technology and assume a new mission to preserve digital data. "On the other hand, there is a decisive advantage of storing digital data as images on film: it is possible to revive them as images at any time." (Ohzeki, 2012, p.100, my translation[325]). In Japan, roughly after the movie *Whiteout* (ホワイトアウト, Setsurō Wakamatsu, 2000), compositing was done digitally. However, there were still working with film as well.

From *Godzilla* (1954) to *Godzilla Final Wars* (ゴジラ FINAL WARS, Ryuhei Kitamura, 2004), the Godzilla character was made with suitmation, in which the actor would embody the monster. The U.S.A. movie version of *Godzilla* (Roland Emmerich, 1998) then brought a full CGI version of Godzilla. However, the result was closer to a mutant dinosaur not following the Japanese

[324] "日本映画業界はオリジナルネガをデジタル化するシステムの導入が遅かったのである。当時は、正直どこまで普及するか分からず、システム自体が高額なため、各社が導入に対して慎重になっていたのである."
[325] "一方, デジタルデータをフィルムで画像として保存することには決定的なメリットがある。それは、いつでも映像としてよみがえらせることが可能だということである."

characteristics of Godzilla. However, the image of *Godzilla* running through skyscrapers was depicted in CG, prompting many people to want to see a Japanese-made Godzilla utilizing novelty technology.

In *Godzilla 2000:Millennium* (ゴジラ 200 ミレニアム, Takao Okawara, 1999), Godzilla's enemy is the UFO called Organizer G1, which tries to absorb the genetic information that only Godzilla possesses. However, because it cannot control it, the UFO starts to transform into a monster. The UFO and the earlier version of the monster Orga are realized utilizing only CGI. Once fully transformed, the UFO becomes the monster Orga, represented with an actual suit and added special effects. The special effects director Kenji Suzuki and the sculptor and effects producer Shinichi Wakasa had difficulty combining the CGI version of the UFO and the characteristic of Godzilla and composing and utilizing such different elements on the screen. "The Godzilla suit, which Toho had made since the first Godzilla, was ordered by an outside sculpting company for this film, and Shinichi Wakasa, the sculpting producer of *Mothra 3: King Ghidorah Attacks*, sculpted Godzilla and the enemy monster, Orga. The scene where Godzilla swims in the sea is drawn by CG." (Toho Company, 2018, p.7, my translation[326]).

Godzilla 2000: Millennium was the first attempt to portray a monster version utilizing only CGI, and some elements where it was challenging to represent Godzilla using suits and miniature models. In *Godzilla, Mothra, and King Ghidorah: Giant Monsters All-Out Attack* (ゴジラモスラキングギドラ大怪獣総攻撃, Shūsuke Kaneko, 2001), another adaptation was made in which the head of the suit actor inside moves the central neck of Guidorah, and the left and right necks can be operated by the actor's hands. "Until then, King Ghidorah's three necks were manipulated by wires, but thanks to the ingenuity of the molding, King Ghidorah's movements were vividly expressed without the need for the manipulation department staff help." (Toho Company, 2018, p. 7, my translation[327]).

As the title suggests in *Godzilla Final Wars* (2004), the movie was planned to mark the end of Godzilla's life. Godzilla defeats the monsters controlled by the X aliens one after another. To meet director Ryuhei Kitamura's intent of having Godzilla do martial arts, the Godzilla suit

[326] "東宝が初代ゴジラから作り続けてきたゴジラスーツを、本作では外部の造形会社に発注し、『モスラ 3 キングギドラ襲来』の造形プロデューサーである若狭新一がゴジラと敵怪獣のオルガを造形した。なお、ゴジラが海を泳ぐシーンは CG で描かれている."

[327] "それまで、キングギドラの 3 本の首はワイヤーで操作していましたが、造形の工夫により、操演部員の手を借りずにキングギドラの動きを鮮やかに表現することができたのです."

was slimmed down to the utmost limit to facilitate the actor's movement performance and fighting skills. However, apart from the U.S.A movies that used CGI, *Godzilla* (1998), *Godzilla* (Gareth Edwards, 2014), and *Godzilla: King of Monsters* (Michael Dougherty, 2019), the first Japanese production to use a full CGI version of Godzilla was *Godzilla Resurgence* or *Shin Godzilla* (シン・ゴジラ, Hideaki Anno, 2016).

In 2004, Hideaki Anno directed the tokusatsu movie *Cutie Honey* (キューティーハニー), an adaptation of the manga of the same name by Go Nagai. The movie's main character, Honey, was played by the Japanese model Eriko Sato. The movie plot tells the story of Cutie Honey, trying to avenge her father and protect humanity against the evil organization Panther Claw. *Cutie Honey* (see Figure 20) is a tokusatsu with anime elements, such as live-action battles surrounded by impact lines and impossible movements made possible by over-the-top effects, such as limb-stretching and mid-air dodging.

Figure 20 Hani-mation and missiles in Cutie Honey (2004)[328]

[328] Still-image from *Cutie Honey* (キューティーハニー). (2004) Hideaki Anno. Japan: VAP (バップ) (1h33min) (DVD).

It incorporates the classical element of Sci-fi anime, the missile maneuvering from different directions, intense lights of smoke, and sparks explosions that appear in the Super Sentai series. It also presents the transforming magical girl, with Honey transforming sequence. She raises her arm, announces *Honey Flash*, and touches the heart attached around her neck after her clothes peel off, and she transforms into the pink suit for battle or any other character.

> The film's highlight is the production method called "Hani-mation" (a term coined in conjunction with Cutie Honey), which maximizes the use of animation-like visual expressions typical of director Anno. Like the production of animation celluloid pictures, a storyboard is first laid out frame by frame, with actors making poses according to the storyboard. Then time-lapse films are laid out to create images that are neither animation nor mere live action. (Sakuma, 2003, para.3, my translation[329])

The combination of animation and live-action without the explicit goal of media distinction made the light theme of *Cutie Honey* transports itself to the media production. It also used CGI elements without concerns to achieve a clean, often cold-finished look. In his career, Anno also directed other live-action genres outside of tokusatsu, like the experimental *Love & Pop* (1998) and *Shiki-Jitsu* (2000). The Hani-mation effect utilized by Anno and the already mentioned work of Itano in *Ultraman* shows that the increased digitalization of media production also demanded the active work of experienced animators to work in composing images from different sources and make them coherent while on movement. After doing all these live-action projects, Hideaki Anno turned his attention to the *Rebuild of Evangelion* project, which would rearrange the original story in four animated movies. The first three movies were released respectively, *Evangelion: 1.0 You Are (Not) Alone* (2007), *Evangelion: 2.0 You Can (Not) Advance* (2009), and *Evangelion: 3.0 You Can (Not) Redo* (2012). However, something else happened in 2012, and even some years before that sparked a movement toward recovering an apparently lost or dead media.

[329] "この映画の見どころは"いかにも庵野監督"らしいアニメーション的映像表現を最大限に取り込んだ"ハニメーション"(キューティーハニーに合わせた造語)という制作手法だ。アニメーションのセル画制作と同様に、最初に 1 コマずつの絵コンテを並べ、それに合わせたポーズを俳優が演じ、コマ撮りしたフィルムを並べてアニメでも単なる実写でもない映像を作り出すというもの." See: https://ascii.jp/elem/000/000/340/340237/ (Accessed 2022.06.06).

Chapter 6: Surviving Legacies

6.0. Building a Tokusatsu Museum

The arrival of digital technology meant that aesthetic changes were expected to be incorporated into existing methods of production. As such, artists stood before tools and techniques, questioning how to harness their craft and make it interesting for the possible viewers. In the moment of change, one could say a media format could possibly die, become obsolete, or even be forgotten. The movement of what happens in the realm of images does not indicate a complete death. Might there be a time for returns? Might there be a time for its survival? The image as an anthropological phenomenon inhabits the artists that make, share, and thrive in a lineage of craft-making and, to a certain extent, causes changes in the social fabric it touches. The image seismic power cannot be contained to one moment; it irradiates through time, even if it looks dead, obsolete, or forgotten.

The story of *Tokusatsu* and *Anime's* relationship traced so far has lived somewhat in the shadows, in the footnotes of books that remind us of their connection, but few times received particular attention. It has survived mainly in the artist's practices, cross-genre collaborations, and fan-industry engagement. That's why its preservation practices came from artists and collaborators that had harnessed their practice by actively being involved in these art forms. From 2010 onwards, artists would start to make efforts and raise awareness among people around them to revive the tokusatsu art and miniatures that they feared might get lost forever. This chapter is the story of artists and collaborators that made exhibitions and events about *Tokusatsu* and started to make efforts to create spaces that preserved and legitimate both art forms, *Tokusatsu* and *Anime*, that they had spent their lives watching, making, and sharing. These movements started at a dinner party celebrating the completion of *Evangelion's* second movie, released in 2009. On that day, Hideaki Anno and his colleagues dared to ask themselves first and then inquire to others*: Can we build a Tokusatsu Museum?*

In 2012, the exhibition called *TOKUSATSU: Special Effects Museum-Craftmanship of Showa & Heisei Eras Seen through Miniatures* (館長庵野秀明 特撮博物館 ミニチュアで見る昭和平成の技)curated by Hideaki Anno and collaborators, was held in the Museum of

Contemporary Art Tokyo. This exhibition was possible because artists, private collectors/fans, curators, and companies, like Toho Company, Tsuburaya Productions, Kadokawa Shoten Publishing, Studio Ghibli, and P. Productions, among others, collaborated. Averagely, the exhibition had around five hundred restored miniatures and props, mostly restored to their original form and construction method of the analog era. Besides exhibiting these materials, they also created and exhibited the tokusatsu short film called *Giant God Warrior Appears in Tokyo* (巨神兵東京に現わる, Shinji Higuchi, 2012), written by Hideaki Anno and Ōtarō Maijō. The short film focused on the bioweapon, the Giant God warrior that appears in *Nausicaä of the Valley of the Wind* (風の谷のナウシカ, Hayao Miyazaki, 1984). Originally Hideaki Anno was entrusted with the Giant Warrior scene, where he animated the dissolving and shooting beams, adding its style of making powerful explosions and effects to the Miyazaki animation.

Miyazaki and Anno, besides working together, are also long-time friends that share mutual respect and admiration for their work. As such, the experimental tokusatsu film was co-produced by Studio Khara (Anno's studio after exiting Gainax), Tokusatsu Research Institute (Toei), and Studio Ghibli, with Miyazaki providing the character rights for the short movie and his voice. In *Giant God Warrior Appears in Tokyo*, the Giant God Warrior fluctuates above Tokyo and plans to annihilate the human civilization. The director Shinji Higuchi was approached by a longtime collaborator and friend, Hideaki Anno, to take part in the project. "Hideaki Anno asked me to help him build a museum to display miniatures used in special effects. I had long heard about the miniatures and props that Tomoo Haraguchi restored and Yuji Nishimura's collection. I wondered if there was any way to bequeath them to the next generation, so I had a general understanding of what he was talking about." (Studio Ghibli, 2012, p.60, my translation[330]).

To understand how the exhibition came to exist and the organizations and collaborative work it ignited, I interviewed Miyoshi Kan (三好, 寛), who worked as a curator and researcher for the Ghibli Museum and the launching of the Tokusatsu*: Special Effects Museum*. Miyoshi Kan, first worked as a magazine editor, and in 2000 he joined Studio Ghibli Inc. He was a curator at the Ghibli Museum in Mitaka, in charge of exhibitions, collection storage, and research. Among his

[330] "庵野秀明さんから、特撮に使われるミニチュアを展示するミュージアムを作りたいので手伝ってほしいと頼まれました。以前から原口智生さんが復元したミニチュアや小道具、西村祐二さんのコレクションについては聞いていました。それらを次の世代に遺す方法はないものかと考えていたので、彼の言っていることは大体理解できたのですが."

work as a curator, it's possible to highlight the "Studio Ghibli Layout Exhibition" (スタジオジブリ・レイアウト ウト展, 2008) and "Director Hideaki Anno's 'TOKUSATSU' Special Effects Museum-Craftsmanship of Showa & Heisei eras seen through miniatures" (館長 庵野秀明 特撮博物館ミニチュアで見る昭和平成の技, 2012), both held at the Museum of Contemporary Art Tokyo. While working as a curator in charge of cultural projects, he was involved in the 2017 establishment of the NPO named ATAC, *Anime Tokusatsu Archive Center*（特定非営利活動法人アニメ特撮アーカイブ機構）, and became its Executive Director.

I interviewed Miyoshi Kan at ATAC on July 11, 2022, surrounded by many materials and a welcoming tea. ATAC was officially established in 2017, but it all started in July 2009, with the wish to bequeath to posterity as much as possible the various intermediate productions and materials produced in the creation and production of animation and tokusatsu images as a cultural movement. Among the founders' names, it is possible to see that the efforts of its making came from artists, industry collaborators, and researchers that are also featured and cited throughout this research. I will delineate the main founder's names[331], however, many more people contributed to the creation and expansion of this archive.

The chairman of ATAC is Hideaki Anno; the vice president is the researcher Ryusuke Hikawa and Shinji Higuchi. Among the founder members are respectively; Kohei Ando (安藤紘平, 1944-), Video Art and Experimental Filmmaker who is also a teacher at Waseda University. Kenji Uchida (内田 健二, 1953-) was a Japanese anime producer who then turned also a president at Sunrise Studios. Koichi Inoue (井上幸一, 1960-) was the former head of the planning office of Sunrise, who helped establish animation production of original features. Shin Unozawa (鵜之澤伸, 1957-), executive producer at NAMCO BANDAI Holdings & Games. Katsuro Onoue (尾上克郎,1960-), special effects director, member, and then president of the Tokusatsu Research Institute (株式会社特撮研究所). Yasuhiro Kamimura (神村靖宏, 1962-) animator, worked at Gainax studios and is now president of Groundworks Co. Nozomu Takahashi (高橋望, 1960-), animation producer, works at Nippon TV, senior advisor to the Ghibli Museum in Mitaka, and is a researcher at ATAC. Souichi Tsuji (辻壮一) is a researcher at ATAC. Yuji Nishimura (西村祐

[331] *ATAC* official website for further information: https://atac.or.jp/about/

次), Representative of M1 Company (M1 号社代), located in Fukushima Prefecture, manufacturer of sculptures of heroes and monsters appearing in Japanese tokusatsu productions. Tomoo Haraguchi (原口, 智生, 1960-) is a special makeup artist, sculptor, film director, and film special effects director. Ryusuke Hikawa (氷川竜介, 1958) is a researcher of anime and special effects and a professor at the Graduate School of Global Japanese Studies at Meiji University. Shinji Higuchi (樋口 真嗣, 1965-) is a filmmaker, special effects director, screenwriter, and storyboard artist. Koji Hoshino (星野 康二, 1956-) is the chairman and president of Studio Ghibli Inc. Toshio Miike (三池, 敏夫, 1961) is a special effects art director and modeler that worked in multiple tokusatsu movies. Takanori Aki (安藝貴範, 1971), CEO of Good Smile Company, works making content for fans of character figures, and Miyoshi Kan (三好 寛, 1969-), curator, researcher, and executive director of ATAC.

Figure 21 Tokusatsu Museum (2012) opening ceremony with Shinji Higuchi, Hideaki Anno, and Toshio Suzuki[332]

[332] Image reference from: https://nlab.itmedia.co.jp/nl/articles/1207/09/news130.html (Accessed 2022.10.05)

6.1. Interview with curator Kan Miyoshi: How did it start?

Interview with curator Kan Miyoshi (三好, 寛)

Date: July 11, 2022.

Place: *ATAC*, Koenji-kita, Suginami-ku, Tokyo. [333]

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Angela: ATAC was officially founded in 2017, but the project started a few years before by people interested in preserving Anime and Tokusatsu culture. For example, in 2012, the exhibition: "*Director Hideaki Anno's 'TOKUSATSU' Special Effects Museum-Craftsmanship of Showa & Heisei eras seen through miniatures*"(Museum of Contemporary Art, Tokyo, held from Tue. 10 Jul - Mon. 08 Oct 2012). Can you tell me how this exhibition became a catalyst for bringing together people interested in preserving tokusatsu and anime? And when did the origin of the ATAC concept begin?

Miyoshi: I see. I understand. So, it was ten years ago. First of all, let me talk about the first question, the situation around the *Tokusatsu Museum*, around 2009. During 2009, Hideaki Anno, as you know, was working on the second movie of the *Evangelion* series, called *Evangelion: 2.0 You Can (Not) Advance* (エヴァンゲリヲン新劇場版: 破, 2009). Since they finished working on the film, they had a drinking party to celebrate. At that time, Mr. Shinji Higuchi (樋口真嗣), Mr. Katsuro Onoue (尾上克郎), and Mr. Makoto Kamiya (神谷誠), all special effects directors, were there. Well, we are all good friends. I think you had an idea about this.

Angela: Yes, I know Hideaki Anno and Shinji Higuchi go way back to the DAICON film times.

[333] Conducted originally in Japanese language. Transcriptions from audio recording made by Mr. Taku Kawai and Ms Mie Kawai. Translations to English language by the author.

Miyoshi: Yes, well, they have known each other since their 20s. Ah, there was also another person at that table, Tomoo Haraguchi (原口智生); maybe you know about him. Do you know that he was in the magazine *Uchūsen* (宇宙船)?

Angela: Yes, I know.

Miyoshi: At the back of the magazine *Uchūsen* (宇宙船), there was a serial page called "Piece of Dream" (夢のかけら) that had a connection with Mr. Haraguchi, whose grandfather was a recording engineer for movies, and he used to visit him when he was working at the movie studios.

Angela: Oh, so that's how it was.

Miyoshi: Mr. Haraguchi was also born in 1960. When he was a child, special effects artists were in full bloom, including *Ultraman* and, of course, *Godzilla*. So many people were apprentices of directors that were making films at the studios. So, the miniatures were on set, and when the filming was over, and the errands were done, *they were thrown away*.

Angela: Yes, I read about this problem in many interviews given by artists at that time.

Miyoshi: After they finished filming and didn't need the miniatures anymore, they were throwing them away in the junkyard, so Haraguchi was like, "This plane was in that movie recently." The staff at the studio said, "It's ok; if you want it, you can take it. You come here a lot; I will give you this". And like this, he took miniatures home. Since he had a lot of them, he also took many pictures. After he became an adult, he started working on tokusatsu sculptures of monsters and mecha. He was initially involved in many productions, part-time jobs, and other things.

Angela: So, he accumulated different knowledge about ways of making miniatures of all sorts, right?

Miyoshi: Since he was a child, he went to filming locations or the miniatures and modeling workshop right near the filming locations and in some ways, he saw how they were made. He saw the actual production happening. So, when he was older and had honed the skills of making things, he decided to fix the miniatures himself. The miniatures that were thrown away at the studios were already in shambles. But even though they were in shambles, for example, the wings had come off and were in pieces, he put them back together properly and re-painted them. He could do that because he saw the finished product in its proper state and also researched the paint and techniques used at the time. He also collected many photographs, so he could check and confirm the details.

Miyoshi: So *Mighty Jack's* (マイティジャック, 1968, Tsuburaya Productions) fighter jet must have been more battered. He fixed it up and puts it back to look like this. (Miyoshi shows me a picture).

Angela: So, Haraguchi put it back together.

Miyoshi: He did the restoration, took photos of it, and put them on *Uchūsen* (宇宙船) magazine, issue after issue.

Angela: So many of his restorations were published in this magazine.

Miyoshi: And he has been doing it for years. There are dozens of them, so they compiled the images in two books. (Miyoshi shows me the books[334]). So, on the day when Hideaki Anno, Shinji Higuchi, and the others were having a drinking party, Haraguchi was taking pictures for the magazine. So, the *Ambassador Magma* (マグマ大使, 1966, P. Productions), you see, transforms into a rocket. After the transformation, Mr. Haraguchi picked up the rocket the studio had thrown

[334] References and book details. 1) First book: Haraguchi, Tomoo; Fumiya Kato. (2021) *Yume no Kakera: Toho Tokusatsu Eigahen* (夢のかけら 東宝特撮映画篇). Tokyo: Hobby Japan Co., Ltd. (株式会社ホビージャパン). This book is a selection of Toho films from the popular serialization project "Pieces of a Dream," which has been serialized from vol.121 to the latest issue of the tokusatsu magazine *Uchūsen* (宇宙船). It features mainly Toho shōwa tokusatsu miniatures and props that were restored and reconstructed by Tomoo Haraguchi and photographed by Fumiya Kato. 2) Second book: Haraguchi, Tomoo; Fumiya Kato. (2021) *Yume no Kakera: Tsuburaya purodakushon-hen* (夢のかけら 円谷プロダクション篇). Tokyo: Hobby Japan Co., Ltd. (株式会社ホビージャパン). The book is a selection of Tsuburaya Productions works from the same magazine. Presented by Tomoo Haraguchi, restorer, with Hideaki Anno, Shinji Higuchi, and Yuji Nishimura as supervisors.

away, fixed the broken parts, and photographed it for the magazine. After that, he joined the drinking party. Haraguchi brought the miniature, and they all looked and said: “Wow, that’s nice!”.

Angela: Oh, so he brought the real thing!

Hiroshi Miyoshi: We all saw the real one at the party, where Mr. Haraguchi said: “I want to show this kind of thing properly at the museum.” Another reason was that people who make these things have already retired, or the companies that make them have gone out of business, and the workshops have disappeared. In 2009, we were already using CG. We didn't make miniatures; we already used CG models instead.

Angela: It seems that times have changed.

Miyoshi: There has been a decrease in the number of such things because people don’t bother to make them, and CG takes their place. Also, even if miniatures are made and filmed, they are still thrown away. So, people like Mr. Haraguchi are rare, aren’t they?

Angela: Yes, I agree.

Miyoshi: The people at the party thought that maybe the tokusatsu culture they liked was finished.

Angela: So, there was such a conversation…

Miyoshi: But since they liked and thought seeing the Magma Ambassador rocket was wonderful, they talked about how great it would be to do an exhibition in a museum or art gallery. So, Hideaki Anno went to Toshio Suzuki (鈴木 敏夫), a producer at Studio Ghibli. Before that, he went to various places for consultation, and one of them was Mr. Suzuki of Studio Ghibli. You know the Ghibli Museum in Mitaka, don’t you?

Angela: Yes, I visited the Ghibli Museum before.

Miyoshi: In short, Ghibli created a public museum in Mitaka City. Hideaki Anno went to Mr. Suzuki for advice on making a museum of Tokusatsu since he was thinking about it.

Angela: I see, so since the Ghibli Museum was already created, Anno wanted to consult about the procedures and ask for advice.

Miyoshi: Anno went to consult with them because they already had the know-how. He said, "I want to build a museum next to the Ghibli Museum." Of course, a Tokusatsu museum. So, Mr. Suzuki said that it was hard to build a museum; it would cost a considerable amount of money and requires many people. And above all, once the museum opens, you must keep it open for a long time. It also costs money to maintain and is challenging. However, Mr. Suzuki said it might be possible to organize some Tokusatsu exhibitions first. That way, it would be possible to find out what kind of miniatures were available all over Japan. And if there is an exhibition, it's possible to negotiate with miniature owners to borrow the miniatures to put them on display at the exhibition. In doing so, it would be possible to communicate with the owners, build relationships and become acquainted with them.

Angela: Oh, I see; they could also connect with the movie companies, right?

Miyoshi: Yes, to build relationships also with the movie companies. Also, doing things this way made it possible to make a list of miniatures and special effects materials that were still available in Japan. That was one thing. The other was to appeal to the world about the critical situation that Tokusatsu had already ended, as Hideaki Anno and others have said before. Above all, they can appeal to the audience and show how Tokusatsu was interesting. So, Mr. Suzuki suggested we do something first before opening a museum. The other thing was that Studio Ghibli had been doing exhibitions at the Museum of Contemporary Art in Tokyo every summer for several years. Since about 2003, or 2004. The reason is that the director of the Museum of Contemporary Art, Tokyo, at that time was a man called Seiichiro Ujiie (氏家 齋一郎), who was the chairman of Nippon TV (日本テレビ放送網). He passed away in 2011. But of course, he was in good health at that time.

Some years before Hideaki Anno consulted Toshio Suzuki, Mr. Ujiie consulted Mr. Suzuki and said that he wanted Ghibli to work with NTV to organize some exhibitions at the Museum of Contemporary Art Tokyo every summer. We could do an exhibition about Ghibli animation, or even other animations. Anyway, they asked to do an exhibition that would bring many people during the summer holidays. Of course, Ghibli is very indebted to NTV, so we accepted and held various exhibitions yearly. Usually, it was a Studio Ghibli layout exhibition or an exhibition of Kazuo Oga (男鹿 和雄), the art director of *My Neighbour Totoro* (1988), or something like that. We did several projects, and in the summer of 2012, we hadn't yet decided on a project to hold that summer.

Angela: So, finally, the opportunity had come along.

Miyoshi: So, everyone involved got together in the autumn of 2010. NTV organizes the exhibition. That is the system or structure of the summer exhibition at the Museum of Contemporary Art Tokyo. The department responsible for managing the Studio Ghibli exhibitions cooperates in planning the exhibition. The Ghibli Museum also cooperates. I was working at Studio Ghibli then, and I was the curator of the Ghibli Museum, so I was put in charge of this. It was decided that in 2012 we would have an exhibition on the theme of Tokusatsu, supervised by Hideaki Anno.

(*Interview excerpt end here*)

6.2. Interview Part 2: Curating the Exhibition

Angela: So, how was the preparation for the exhibition?

Miyoshi: At that time, there were a lot of different titles, like "Supervision: 70 Years of Hideaki Anno's Tokusatsu". At one point, it was titled "Farewell Tokusatsu," as if to say that Tokusatsu was already over. With the increased use of CGI, the meaning was that the special effects of miniature analog technology, which had been developed since Eiji Tsuburaya Eiji in the Shōwa period, had finished their role. We had the idea of holding a ceremonial "Farewell Tokusatsu" exhibition to express our gratitude and condolences spectacularly. However, that would be a bit too extreme since there are still people who continue to make tokusatsu and fans who love them, even though the opportunities (for filming) have decreased. After many twists and turns, the title was changed to "Tokusatsu Museum."

Angela: There was a bit of a change.

Miyoshi: It's a special exhibition, but the title is already "The Tokusatsu Museum." Because it is a museum, the director is Hideaki Anno. So, "Director Hideaki Anno, 'TOKUSATSU' Special Effects Museum" to be more precise, we wanted to feature tokusatsu, particularly in miniatures, so we also titled it "Craftsmanship of Showa & Heisei eras seen through miniatures."

Angela: This process of change is exciting.

Miyoshi: So, as far as possible, we gathered miniatures that were still available in the world today and can be exhibited. The Museum of Contemporary Art, Tokyo, has a vast exhibition space, so the first thing we did was to borrow as many miniatures as possible. But as a result, how much is it, maybe about 500 to 600. It's difficult to count the number of items we gathered at that time. For example, at the end of the exhibition, we built a miniature stage like a film studio, where visitors could go up and take pictures. The number of items on display would differ depending on

whether a small set or each telephone pole on display is counted. So, it isn't significant to say how many items are displayed.

We wanted to show as many items as possible and ended up exhibiting about 500 items. Firstly, we tried to show as much as possible of the old tokusatsu, including many real miniatures, and as much as possible of the Shōwa period. I also mixed in a few Heisei period items in the newer areas, but I tried to show as much as possible. Another thing is to show them creatively. For example, behind the large backdrop called “Horizon” in the studio, there was an art warehouse where miniatures, suits, and various other things were stored. Once it got too full, they threw items away. Of course, there were art warehouses that were not thrown away and were still kept, but now they are rarely in the studios anymore. But anyway, when you entered the studio, there used to be a warehouse full of monsters and mecha. We are trying to recreate that in the Tokusatsu Art. Finally, we turned the exhibition space into a film studio and built a miniature stage where visitors could walk around the miniature set and take pictures. We devised such a way to present the exhibition. If we made it look like a regular exhibition, just a bunch of miniatures on display like sculptures, it would be attractive to the fans, but not to everyone. So, one of the things we did was to try to make it more interesting.

Miyoshi: The third one is a video that was made. That is a short special effects film called “The Giant Warrior Appears in Tokyo” (巨神兵東京に現わる, 2012).

Angela: Yes, I watched it on YouTube. I brought some pamphlets and documents about it. One of my teachers, Ms. Minoguchi, attended the exhibition and told me about the setting, and shared with me some exhibition books.

Miyoshi: Oh, I see. Originally, “The Giant Warrior Appears in Tokyo” was intended to be shown only at the exhibition. No CGI was used. At that time, everything was shot digitally, and digital compositing was used to finish the film. At that time, we used digital compositing, but we did not use full CG for special effects such as 3D CG, explosions, special beams, etc. Instead, we used analog technology to shoot the film and then composed them digitally to create the film.

Angela: I noticed when I saw it that there was a combination of analog and digital. Well, was the beam not in CGI? I know that the burning part was made with real material and then composed digitally. I am interested in the combination of analog and digital in media production.

Miyoshi: The Beams were also analog.

Angela: Even the beams were analog?!

Miyoshi: Beams are also done by drawing the beams with a pencil on paper, cutting the light mask, taking pictures of the light, and compositing them together.

Angela: Oh, that's right, they used to do it like that. But when I saw it, I had the impression of CGI.

Miyoshi: It looks like CG, but it was not used. However, "The Giant Warrior Appears in Tokyo" was first made as an exhibition piece for "Director Hideaki Anno's TOKUSATSU Special Effects Museum" and was later released in theaters as a simultaneous screening with the *Evangelion: 3.0 You Can (Not) Redo movie* (エヴァンゲリヲン新劇場版:Q, 2012), which was released in the fall of the same year.

Angela: Oh, there were two versions! Is that what you mean?

Miyoshi: Yes, and so the one shown with Evangelion in the movie theater used CGI.

Angela: Oh, I see. I think that the one I saw on YouTube must have been the one that uses CGI.

Miyoshi: It's already on Blu-ray, also. However, the one that was shown at the exhibition has not been made into software at all. You can watch it at the exhibition, or you can watch it now at the *Sukagawa Tokusatsu Archive Center*.

Angela: It would be interesting to compare them and see the aesthetic differences.

Miyoshi: I don't think you can tell unless you compare them properly. But, of course, you can know it is a bit different. There is another point, besides the film itself, they filmed the filmmaking process. The film “The Giant Warrior Appears in Tokyo” is less than 10 minutes long. The making of the film, however, is 27 minutes long. It explains the process in detail. We did not throw away the miniatures we used or the devices for the miniature scenes, but we took pictures of them and exhibited them. Shinji Higuchi said, “Let's do it this way.” The exhibition staff came up with the idea of making a film, and it was Hideaki Anno who suggested making a film of the Giant Warrior. It was Higuchi who said that the making of the film would be used in the exhibition. This was an essential element of the exhibition. So, we had to devise a way to showcase many authentic objects from the past and create new videos. Have you been to the Museum of Contemporary Art in Tokyo?

Angela: Yes, I have!

Miyoshi: It’s a three-layer structure with the first floor, the second floor, and the first basement floor, but we used two floors, the first floor, and the first basement floor. That’s why it’s nearly double the size of a regular exhibition. We had more than 290,000 visitors. I think it still ranks at the top of all-time attendance records. It may be in the top 10. We mobilized that many people. We honestly did not expect that many people to come. The reason was that in 2012, there was no new *Godzilla* movie. Before that, they were filming Godzilla movies frequently. *Ultraman* was also on a kind of hiatus. It was before *Ultraman Ginga* (2013) started.

(*Interview excerpt end here*)

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The *Giant Warrior Appears in Tokyo* (巨神兵東京に現わる, 2012) film is a little over 9 minutes with the Giant Warrior flying above Tokyo and then destroying the city with his menacing beams. Because it was created to be exhibited at the *Tokusatsu Museum*, they utilized analog ways

of producing explosions, miniatures of buildings, cut-outs of people and animals, special beams, etc. The composed scenes were done digitally instead of using the traditional optical printer. The only human being in the film is Megumi Hayashibara's narrator voice, also known for her role as the voice actress for Ayanami Rei in the *Evangelion* series.

Besides the movie itself, they also register the making-of of the movie, explaining how they overcome the challenge of not utilizing CGI. The making-of footage is 27 minutes long. It explains the process in detail. The version made for the exhibition is also available at the *Sukagawa Tokusatsu Archive Center* (須賀川特撮アーカイブセンター) in Sukagawa city, the hometown of Tsuburaya Eiji. The center was created for harboring miniatures and materials after the Tokusatsu Museum exhibition was over. I will cover this process in detail in the coming pages; however, for now, I will focus on my experience visiting the facility and watching the making-of footage.

I went to Sukagawa and discovered that in the middle of rice fields and some houses, the *Sukagawa Tokusatsu Archive Center* stands. Even though it was a rainy day, families were bringing their children to the center. The first floor contains a small exhibition area that leads to the miniature archive, a protected room with glass, and a controlled temperature that guards many objects. The first floor also has a library with everything related to tokusatsu, from filmmaking to art-making, where visitors can spend time exploring and reading. The second floor contains two big miniatures and a screening room. The center offers different screening times, where the public can watch the original *Giant Warrior Appears in Tokyo* (2012) made for the exhibition and the making-of footage. I sat among families and children that are curious about the movie that is about to start.

I previously watched the version accompanying the *3.0 Evangelion* animation DVD, where they utilized CGI. So, I was particularly interested in watching the original version, where although they used digital format for editing, everything else was made with an analog approach. It becomes clear that the original version is not only about preserving such techniques but also about passing and teaching the potential public about tokusatsu history and its DIY proposals. The main difference between the two versions is that in the original, you primarily feel the screen materiality and the objects used without having a complete detachment from the story. To a (un) trained eye looking for clues, the cardboard cut-outs of people looking up to the sky, the dog puppet scene, and the lights that are lamps inside the Giant Warrior puppet are apparent and special. You

are transported to a world close to reality, where the mimetic scenes don't try to hide the artifice, nor are they completely *kitsch*. It is a fine balance between elements and explosions that tear everything apart, revealing materials, smoke, bits of buildings, and the edition that is holding everything together.

After finishing the movie, it is time to watch the making-off. The titles appear in fast timing, with titles reminiscent of Evangelion's lettering style. It becomes clear that the movie was filmed in many parts and scenes that were ultimately composed together, as in the analog era. They utilized blue screens, and the manipulation team also used blue suits.

While Takayuki Takeya made the sculptor model of the Giant Warrior, Masayuki Kurahashi (ミューロン, Mewlon Co.) was responsible for the mechanical molding. Kurahashi team planned the Giant Warrior suit as a bunraku puppet that could be manipulated since its proportions were not fit for a human actor to be inside and move, as in the analog era. For the "puppet" to be able to perform, they attached extending sticks to the head, shoulders, arms, waist, and legs so that the manipulation team would perform its movements—these attached sticks connected three manipulators to the giant puppet. The challenge was that all of them had to move simultaneously while creating a sense of unity. They also designed the puppet to be detachable into the waist, abdomen, and chest so that only parts of the upper body and legs could be filmed. They also inserted removable joints for the shoulder blades and elbows; so the manipulation team could adjust the puppet to make the flying poses above Tokyo city miniature.

> The Giant Warrior itself has a latex rubber surface, aluminum core, and urethane foam interior. The helmet-shaped head is made of FRP (Fiber Reinforced Plastic), and the fangs and other hard, detailed parts are made with a cast (non-foamed urethane resin). The eyes and shoulder spikes are made of transparent polycarbonate and have electric lights inside. (Studio Ghibli, 2012, p.23, my translation[335])

In the floating scene above Tokyo's miniature panoramic view, they had to combine the puppet with the digital light spikes that came out like wings adjusting the camera work to integrate the flow of the scene. "The shutter speed was slowed down to one frame per second to pin the

[335] "巨神兵自体は、表面がラテックスゴムで、芯にアルミ、内装 には発泡ウレタンを充填してあります。兜状の頭部は FRP(繊維強化プラスチック)製、牙など堅くて細かい部分はキャスト(無発泡ウレタン樹脂)製です。眼や両肩のトゲは透明ポリ製で内部に電飾が仕込まれています."

camera from the front to the back. Due to the camera work, a computer-controlled motion control camera was used." (Studio Ghibli, 2012, p.29, my translation[336]). They utilized footage of real Tokyo and real people walking around the city. That is the only movie part that utilizes "real" people. Subsequently, they used Tokyo miniature with the cut-out extras, that is, photographs of real people cut and pasted onto styrene boards. "Many of them were taken from the backs of large numbers of people looking up at the Tokyo Sky Tree. There are more than 100 of them. The ones in the foreground are about 1/10th the size, and those in the background are about 1/25th the size." (Studio Ghibli, 2012, p.35, my translation[337]). After the Giant Warrior descends, he walks around Tokyo, and the explosion of the buildings happens when the Giant Warrior unleashes a powerful beam that cuts buildings from the city of Tokyo and reaches the district of Gotanda. Additionally, miniature explosions were filmed in detail and then composed within the main footage narrative. For the breaking of windows and buildings, they show how they used thin cables within the structure and pulled them to break in a structured and realistic manner. The stop-motion dog scene was also filmed separately and then composed together with the park miniature model.

Director Shinji Higuchi describes how he wanted to recreate the special effects that characterize the landing of the ray weapon depiction in Hayao Miyazaki's animation. This influence and description are also presented in the booklet that accompanied the *Tokusatsu Museum* exhibition catalog. "I wanted to achieve the timing and texture of the light rays of the robot soldiers in *Laputa: Castle in the Sky* (1986), where they would meltdown and then explode, so I shot multiple materials separately, assuming a combination of hard and soft. The bombs landing on the buildings in the distance are also like something out of *Laputa*." (Studio Ghibli, 2012, p.40, my translation[338]). To produce the effect of the light beam melting the buildings and subsequently exploding, they placed an orange paint-like mixture inside a rubber balloon and burst it with gunpowder. The gunpowder explosion caused the liquid to fly out, representing a building liquefied by high heat. They film this process, calculating the liquids angles and dripping to later add to the digital composition, together with the cutting rays. This meticulous process captures the

[336] "手前から奥までピントを合わせるために、シャッタースピードを 1 秒 1 コマと遅くして撮影。カメラワークがあるため、コン ピュータで制御するモーションコントロールカメラが使用された."
[337] "その多くは東京スカイ を上げている人々の姿を大量に撮影したものが使用されている。その数は 100 体以上。前には約 1/10. 奥には約 1/25 のサイズのものを配置."
[338] "『天空の城ラピュタ』 (1986)に登場するロボット兵の光線のように当たってから間があってドロリと溶融してから爆発するようなタイミングと質感を狙ったので、硬柔組み合わせるのを前 提に複数の素材を別々に撮影しています。遠くのビルに着弾 するのも「ラピュタ」ですね。(監督:樋口真嗣)."

analog DIY techniques that marked the beginning of tokusatsu but also incorporates animation elements of representation, together with digital composition.

In terms of production, they based the image sketches and the sound data on the words written by the novelist Ōtarō Maijō (舞城王太郎); a lica reel (video container) was created using the Final Cut Pro video editing software, then edited and adjusted by director Higuchi. Based on this storyboard, art director Toshio Miike created the city art plan. Hideaki Anno and Toshio Suzuki were the producers in charge. Maeda Mahiro made the design, and Takayuki Takeya was commissioned to create a sculpted model of the Giant God Warrior puppet. In the exhibition booklet, Takayuki Takeya comments on the process of making the short movie.

> At first, neither Anno nor Higuchi told us about the concept of making the film resemble Evangelion in a homage way. But as we worked on it, we gradually understood it. I think that Eva initially has its roots in the fact that Anno-san was in charge of the Giant Warrior part, and at the very least, I think that Eva is an existence that resonates with that idea. Overlapping the *Giant Warrior* and *Eva* was an exciting part. (Studio Ghibli, 2012, p.22, my translation[339])

The manga *Nausicaä of the Valley of the Wind* was serialized in Animage, but the animation had different elements. Miyazaki directed it, and the scene where the unfinished Giant Warrior is melting and shoots a beam straight at the King Bug (Ohmu), causing an explosion, was created, and animated by Hideaki Anno. The experiences of Hideaki Anno animating the *Giant Warrior* melting scene and his aesthetic maturing in the *Evangelion* series can be perceived in this new version of the Giant Warrior. It is as if the Giant Warrior had gained a final form by intersecting with the humanoid shape of *Evangelion*. Higuchi jokes about having the original animator, producing the movie. “We asked the animator who worked on the original *Nausicaä* to do the optical drawing of the proton beam. Fortunately, he oversaw the planning of this film

[339] “当初、オマージュ的にエヴァンゲリオンに似せていくというコンセプトは、庵野さんからも樋口さんからも伺ってはいなかったんです。ただ、作業を進めていくうちに、だんだん感じてきましたね。もともとエヴァというのは、巨神兵のパートを庵野さんが担当したというところにルーツがあると思いますし、少なくとも、その想いを共鳴した存在であると思っています。巨神兵とエヴァをオーヴァーラップさせていくというのは、非常に面白い部分でした.”

(laughs). After a lapse of more than 30 years, he reaped the benefits." (Studio Ghibli, 2012, p.38, my translation[340]).

One special element explored in the making-off was the use of large-scale explosions using gasoline and gunpowder, which makes a powerful and bright explosion. To carry out the explosions, they utilized a former mining quarry in Sano city, Tochigi Prefecture. The explosions were filmed over two days, with a team led by Kazuaki Sekiyama (関山 和昭), and composed together with the beam scene, destruction of buildings, and the scene close to the end, in which the camera rotates while shooting at ultra-high speed while explosion fragments flight all over the screen. Another memorable scene is the explosion of Tokyo Tower, a technological symbol that was repeatedly destroyed throughout tokusatsu shows. "The explosion's flames engulf Tokyo Tower, and the symbol of the Showa era collapses amidst the flames. Producer Toshio Suzuki wanted to include this scene. I had already destroyed the tower once in *Gamera and* didn't want to do the same thing, so I explored various positions." (Studio Ghibli, 2012, p.46, my translation[341]). The scene was filmed from above and it leaves the materiality and its symbolism in tokusatsu become central stage.

At the end of the making-of, the lights in the room turn on, and people of all ages are commenting on what they just watched, from children to senior citizens of Sukagawa. *Giant Warrior Appears in Tokyo* explores the crossroads presented for tokusatsu as digital technology becomes widespread, and so the first version is dedicated to explore, preserve and educate on analog aesthetic process.

A second version named *Giant Warrior Appears in Tokyo; the theatrical version* (巨神兵東京に現わる 劇場版, 2012) was released then in theaters as a simultaneous screening together with the *Evangelion: 3.0 You Can (Not) Redo movie* (ヱヴァンゲリヲン新劇場版:Q, 2012), which was released in the fall of the same year. Later it would also accompany the DVD release. This version utilizes CGI, for example, in the wings of the Giant Warrior, adding digital elements to the scenes, and so on. For instance, in an interview by Koichi Noguchi (Toei Animation) for *CG World Japan* magazine, he asked Shinji Higuchi about his approach to CG, miniature work,

[340] "プロトンビームの光学作画はオリジナルの"ナウシカ"を手掛けたアニメーターの方にお願いしました。幸いな事に本作の企画担当者だったのです(笑)。三十年以上の時を経て薙ぎ払っていただきました。(監督: 樋口真嗣)."
[341] "爆炎は東京タワーも包み込み、炎の中で昭和のシンボルが倒壊する。鈴木敏夫プロデューサーたっての希望で入れたシーンですね。自分は、『ガメラ』で一度、壊してるんで同じ事をやるのは嫌なので、いろいろなポジションを模索しました."

and filming in the theatrical version of *Giant Warrior*. Shinji Higuchi explains that for the theatrical version, they used many CGI elements, and in the scene where the building collapses due to an explosion, CG elements were placed to balance the scene.

> We did not place them at the shooting stage because they would have blurred the focus, but we later combined them with CG poles and added overscaled spark CG effects that dared to look like a miniature. The goal was not photorealism but the reproduction of miniature work, so there should be no sense of discomfort (laughs). (Noguchi, 2013, para. 4, my translation[342])

The 3D CGI and analog effects were blended, and the overall look and feel of miniatures were reduced in this version. As such, it takes an attentive eye to perceive the differences between the two versions in some moments. However, the experiences with CGI and other digital techniques also gave possibilities for tokusatsu and animation to expand their expression methods. Director Higuchi had worked with virtual camera[343], pre-visualization[344], and motion-capture[345] techniques which he introduced to Hideaki Anno for the *Rebuilding of Evangelion* series.

> Higuchi: During the filming of "Nobo no Shiro," we used a previsualization system developed by Satoshi Yamaguchi of ACW Previsualization Deep. At the time, I thought that Mr. Anno would definitely want this system, so I introduced it on a trial basis for the production of "Eva Q." As expected, he liked it and used it in many cuts. For example, even in the cut of a casual walk down a corridor, I was told that he wanted to add a little

[342] "撮影段階ではピントがぼけてしまうという理由で配置しなかったのですが、後から CG の電柱を合成して、あえてミニチュア特撮に見えるオーバースケールな火花の CG エフェクトも加えています。目指した目標がフォトリアルではなく、ミニチュアワークの再現なので違和感はないはずです（笑）." Noguchi, Koichi (野口,光一). (2013) '*Nippon ni furu CG anime wa netsuku no ka? Dai 11 kai Higuchi Shinji'* (日本にフル CG アニメは根付くのか？第 11 回：樋口真嗣), *CG World Japan*. Available at: https://cgworld.jp/regular/jcg/011-higuchi html (Accessed: 2 February 2022).

[343] Virtual camera, is a system in which the director decides on the camera work while checking the 3DCG image displayed in real-time on the LCD monitor attached to the camera.

[344] Pre-visualization is the process of creating images using temporary materials prior to live-action shooting and 3DCG production. It is effective for simulation before shooting, and designing complex CG synthesis, thereby streamlining the production process.

[345] Motion capture is the process of tracking and recording human movements with a motion capture suit. After the recording, it's possible to use for 3D or CG projects, narrowing down the keyframes and giving a baseline for movement, which aids animators and directors in the production process.

more to the inorganic movement characteristic of 3DCG. (Noguchi, 2013, para.7, my translation[346])

These digital tools allowed director Hideaki Anno to anticipate 3D CGI production and work with the post-production with more control. The second version of *Giant Warrior* and *Evangelion 3.0* were shown simultaneously in theaters and were released together in DVD format, but most of all, they were both strands of tokusatsu and animation that had been guiding Anno's work and had been actualized by the developments around 2012.

[346] "樋口:『のぼうの城』の撮影時に、ACW Previsualization Deep の山口 聡さんが開発した プリビジュアライゼーションシステム（※5）を利用したんですよ。そのとき、これは庵野さんが絶対にほしがるだろうなって思いまして、『ヱヴァ Q』の制作で試しに導入しました。予想通り気に入られて、あちこちのカットで使いました。例えば何気ない廊下を歩くカットでも、3DCG 特有の無機質な動きに、もう一味加えたいんだと言われてね." Noguchi, Koichi (野口, 光一). (2013). Available at: https://cgworld.jp/regular/jcg/011-higuchi html (Accessed: 2 February 2022).

6.3. Interview Part 3: Building Cooperation, before and after the Exhibition

Angela: Yes, there weren't many new tokusatsu shows at the time of the exhibition (2012).

Miyoshi: The only tokusatsu we could watch every week was *Super Sentai* and *Kamen Rider*; well, maybe there were others. In this sense, there was a *real cultural crisis* regarding genres. However, after holding this exhibition, Hideaki Anno, Shinji Higuchi, and others went to press conferences and interviews and appeared on TV to promote the exhibition. The exhibition was featured in various magazines, so many people were attracted to the tokusatsu genre.

So, there are *before* and *after* the exhibition; for example, we have been doing the *Uchūsen* magazine for a long time. After the exhibition, books were published on tokusatsu, and exhibitions on other tokusatsu themes were held. And in the Godzilla series, *Shin Godzilla,* was released in 2016. Producer Minami Ichikawa (市川, 南) of Toho studios, who saw the *Tokusatsu Special Effects Museum* exhibition, thought it was interesting and asked Hideaki Anno if he would be interested in directing a film. At first, Hideaki Anno tried to refuse, but he was persuaded to make *Shin Godzilla*. So, the *Tokusatsu Museum* is in Tokyo for a year and travels around the country until June 2015. It went to Matsuyama City, Ehime Prefecture, Nagaoka City, Niigata Prefecture, Nagoya City, and Aichi Prefecture, and ended in Kumamoto City. The *Tokusatsu Museum* (2012) continued for several years, and the final stop of the exhibition tour in Kumamoto was held from April to June 2015. So, as the person in charge of the exhibition, I had always thought that it was very good that they were going to do an actual Tokusatsu museum and that *Shin Godzilla* was going to be born.

Angela: When I saw *Shin Godzilla*, I remembered something about the exhibition. I saw the Godzilla beam, and I remembered the beams in "Giant God Warrior Appears in Tokyo." I thought that there was an aesthetic connection, but now that I'm hearing you, it is related somehow, isn't it?

Miyoshi: They are related, or rather, the people who make the films are almost the same. Shinji Higuchi was the director of “Giant God Warrior Appears in Tokyo.” Of course, Shin Godzilla was also directed by Higuchi. Katsuro Onoue (尾上, 克郎) was the general leader of special effects. He was the one who went to the drinking party I mentioned earlier. Also, Toshio Miike (三池, 敏夫), who has been working with Mr. Onoue at the Special Effects Research Institute for many years, was naturally responsible for the special effects part of Shin Godzilla as well. In addition, the staff overlaps with Atsuki Sato (佐藤, 敦紀), who edited and did special effects for the most part. Also, with “The Giant Warrior Appears in Tokyo,” we took on the challenge of creating more interesting images by doing this kind of thing, and we have been making technical step-ups ever since. So, they are the same kind of staff. There is a trend that these staff members will take on the challenge taken from *Shin Godzilla* in the years to come.

Angela: That’s a really interesting point. I’m excited about what is to come in the future.

Miyoshi: Oh, I see! The important thing was not to end with “I'm glad we had many people at the exhibition” that should not be the end of the story. In other words, for this purpose, there is the problem of miniatures being thrown away, people no longer making them, and the special effects techniques and the ideas and soul of the people who made them could be forgotten. We must preserve such things properly and disseminate them whenever possible. If we don’t open them up to the public, show them to everyone, and let them enjoy them, *they will not survive*, and they will die. This is a problem that has not been solved for a long time.

But thanks to the exhibition, we now have a better understanding of who is preserving what items and where, including individuals and companies such as Toho and Tsuburaya Productions. This goes back to what Mr. Suzuki said earlier, to make an exhibition, catalog, and list of materials available, talking and getting acquainted with people. (About the collectors) I asked to work for a day to make lists and catalog. I have been doing this for a long time, so I have come to understand.

Angela: And in doing so, you also learned about the companies.

Miyoshi: Yes, we also know what kind of things are stored in the company and where they are stored. So, we have to keep and protect these materials.

Miyoshi: So, in a nutshell, this place is an Archive. (Obs.: Referring to the building of アニメ特撮アーカイブ機構 (英名/Anime Tokusatsu Archive Centre, ATAC). The archival activities did not end when the *Tokusatsu Museum* was over. I was going to do another exhibition after the traveling exhibition. However, Hideaki Anno said, "No, I want to do the archive properly this time, and I want to do the preservation of miniatures properly." So, I quit Studio Ghibli and moved to Hideaki Anno's company, Khara inc. (株式会社カラー), in 2015. After the exhibition in Tokyo in 2012, we started touring around the country to keep it in temporary storage for the next exhibition. However, we knew that after finishing in Kumamoto, there was nowhere to store it, so we had to find a real place to store it in the meantime. At that time, I was occupied with the exhibition, so Hideaki Anno and Shinji Higuchi were also involved in the preservation of the artworks, but Katsuro Onoue was the main person in charge. Along the way, we relied on various contacts and supporters. One of them was a company called Mori Building (森ビル株式会社) in Roppongi, which is doing various cultural activities in cooperation with the *Agency for Cultural Affairs* (文化庁). They also own an art museum. They have a department that handles cultural affairs. They were interested in the Tokusatsu Special Effects Museum and Tokusatsu, so they cooperated with us in various ways.

Angela: That's why there was a initiative to conduct the research documents, *Survey on Tokusatsu* (特撮に関する調査, 2014), and *Animation Guide to Japanese Robot Animation* (日本アニメーションガイドロボットアニメ編, 2014). I read it when I was living in Brazil.

Miyoshi: Originally, the Agency for Cultural Affairs and Mori Building created the "Media Arts" project[347], which later went by a long, long list of names.

Angela: Ah! I see, so the research was from the Agency for Cultural Affairs, and the project name was Media Arts Information Center and Consortium Establishment Project[348] (文化庁「メディア芸術情 報 拠 点・コンソーシアム 構築事業」), isn't it?

[347]About the Media Arts Project, see https://www.bunka.go.jp/seisaku/geijutsubunka/media_art/ (Accessed June 25, 2022).
[348] Website from the project mentioned, see https://mediag.bunka.go.jp/project/media2/ (Accessed 22 June 2022).

Miyoshi: I was the contact person for various consortium projects. We were working with the Agency for Cultural Affairs, with Mori Building serving as the secretariat, and collaborating with various visual industry and university organizations to carry out a variety of projects. As part of a Media Art project, we held a tokusatsu talk show. As you mentioned, they started the research *Survey on Tokusatsu* (特撮に関する調査, 2014). Hideaki Anno was not directly involved in this project as a researcher. Mr. Onoue, Mr. Ryusuke Hikawa (氷川,竜介), and Mr. Toshio Miike conducted the research steadily with the help of students. We started this project in 2013, starting from the end of 2012, as I think you saw in the research report.

Angela: When I read it, it was around 2016. So, it's an interesting story; when I read it in Brazil, I thought, "Oh, I can do this as a research theme as well." I was thinking about it for a while, but I think when I read the reports, it gave me the courage to do research in Japan.

Miyoshi: Well, then it's worth doing.

Angela: At that time, I thought about the relationship between Anime and Tokusatsu, and it felt so interesting to me.

Miyoshi: As it is, Tokusatsu has been forgotten by many people. So, I started with the definition of what Tokusatsu is, and then I started to investigate the history, the important people, and their works. I interviewed many people, such as craftsmen from the past who are still alive and well, and so on. That's how I became good friends with Mori Building. Through these collaborations, I set the goals ahead. And yes, there is a connection between the two, from a long time ago.

Miyoshi: Also, since Mori Building's main business is real estate, and its name is "Building," they know a lot about land and buildings. So, we would consult with Mori Building about finding a place to store the miniatures. On the other hand, as part of a variety of Agency for Cultural Affairs projects, Mori Building was planning a talk show in Tsuburaya's hometown of

Sukagawa City, Fukushima Prefecture. We held a talk show in 2013 under the title *Tokusatsu Jukku*[349] (特撮塾, Tokusatsu Cram School).

Angela: I remembered I found information about this event online.

Miyoshi: That is why we did it in the event space of Fukushima Airport Park. Fukushima Airport is located in Sukagawa City. Sukagawa City is the hometown of Tsuburaya Productions, so we have been working with Tsuburaya Productions for a long time on various Tokusatsu-related projects. Tsuburaya Productions and Sukagawa City, the hometown of the so-called *Ultraman, Land of Light* (光の国ウルトラマン), have a sister city agreement. So, we are good friends. Sukagawa City is a good friend of ours, and that is why we are going to conduct a talk about Tokusatsu. Hideaki Anno, Shinji Higuchi, Katsuro Onoue, Toshio Miike, and Tomoo Haraguchi would all gather there. The mayor of Sukagawa City and the governor of Fukushima Prefecture were also there. So, Anno and his team went directly to the mayor of Sukagawa City. We had time to talk with the mayor and asked him for advice. We asked if there was a place for a *Tokusatsu Museum* and a place to store the miniatures. At that time, the mayor of Sukagawa City said, "I understand it." That's because they were proud to be the hometown of Eiji Tsuburaya.

Angela: Also, in Sukagawa they have the *Eiji Tsuburaya Museum* (円谷美術館).

Miyoshi: It was not there yet in 2013; they launched in 2019. I don't know much about the Eiji Tsuburaya Museum. As far as I know, as of 2013, we consulted with Sukagawa City for the first time, and they accepted.

Miyoshi: From there, a person named Mr. Ando, who was first the chief of the tourism section of Sukagawa City, became the contact person in charge. Eventually, he told us that it was not for sightseeing purposes. Mr. Onoue and others in charge of tokusatsu said: "No, just because we have preserved miniatures of tokusatsu, does that mean that tourists will come for them, and the town will be revitalized and revitalized? No, that is not true." It's an old thing, and anime is

[349] *Tokusatsu Cram School* event "トークセッション特撮塾@ふくしまー特撮を語ろう、未来に向けてー" Poster and information about this public event, see https://mediag.bunka.go.jp/article/tokusatsu2013-994/ (Accessed 24 June 2022).

far more popular. Tokusatsu is unlike anime, where 100 or 200 are made yearly. In other words, it's the same thing, and there is no revitalization. But apart from that, we must preserve what we have to preserve. Because if this goes away, it will already be forgotten.

The idea was not to make it a tourist attraction, a crowd-pleaser, or a resource for making money. Instead, I would like everyone to think that the tokusatsu culture that Mr. Eiji Tsuburaya developed can be a source of new works for people to learn about, enjoy, or study and that by seeing these actual works, they can become the basis for new works. *I would like to see the preservation of the artifact itself as an objective in itself.*

Angela: When I read the news about the talk show *Tokusatsu Jukku*, the report writer said that he thought there was an impressive moment when Hideaki Anno talked with the crowd that day and made a request: "Please do something; I want you to do something, please." It was a request for people to join in the preservation task.

Miyoshi: Yes, that's right. I mean, Hideaki Anno, to put it extremely, kept appealing to anyone to help us with what we were doing and not to leave the miniatures behind. He told the *Agency for Cultural Affairs*, and that's what he said to various people he knew, including Studio Ghibli. And this time, we made a speech to Mr. Tsuburaya Eiji's hometown, Sukagawa City. Of course, when making the speech, we also appealed to everyone in the audience.

Angela: People came from different places around Japan to the talk?

Miyoshi: Well, yes. I don't think they came from all over Japan. Of course, some people came from far away. I don't know how many; I don't think there were more than 100 people—the audience for that session itself. But it didn't matter how many or how few there were; we appealed to an unspecified number of people. So, the city of Sukagawa agreed to help us with the preservation. Specifically, we were talking about idle facilities in Sukagawa, which used to be community centers, schools, and other public facilities in the city. These public facilities were no longer used for various reasons and were vacant. We received a proposal that we could turn some of these buildings into a place of conservation. At that time, I think it was around the end of 2014. We visited some of them. I also visited as well. But that was obvious to see a place to preserve the

Tokusatsu Museum after it was finished. Soon, after some back and forth, we found a facility in Sukagawa City that was no longer in use, and we thought it would be perfect.

Angela: So, it was like a place finally appeared.

Miyoshi: Although it was a nice place, it was unsuitable for long-term storage. So, knowing that some preservation conditions need to be in order, we asked for air conditioning to cover the glass windows, so no sunlight would come in, and so on.

Angela: Right. Many things need to be done in the building to be ready to preserve artworks.

Miyoshi: Another thing was to install security measures. If there is a break-in or fire, we asked please make sure people can come to check immediately. They did as soon as we asked them. After the place was ready, they widened the exit to allow us to carry in and out the materials and put shutters on it. This was done just as the traveling exhibition was finishing.

Angela: And that was in Kumamoto. After the exhibition, the actual miniatures were sent to the facility in Sukagawa city. Yes, conservation and repairing require many things over time.

Miyoshi: In other words, in terms of money, you will lose money. However, Sukagawa City was willing to take it.

Angela: I guess Sukagawa City was thinking about it from the point of view of being Eiji Tsuburaya's hometown and creating an image for the future. They saw the purpose of preservation and felt compelled to help.

Miyoshi: I think the best person to talk to is the mayor of Sukagawa City, but I think it would be a good idea to talk to the right people. It's not just me. As a person involved in the special effects museum at that time, I would say that it is better to preserve the miniatures in the museum than anywhere else. Still, of course, it is necessary to have people who are willing to preserve them.

Then, to be honest, there were many stories about making money by preserving miniatures and creating miniature parks or miniature lands. How would you like to do that? But I turned them down.

Angela: You had a different purpose in mind, correct?

Miyoshi: It's not so much the purpose but rather the fact that I knew it would fail. Making money is a very high hurdle. I think it is fortunate that 290,000 people came to the Tokusatsu Museum. I felt that kind of luck wouldn't last forever. Instead, I thought there must be a reason for preserving the miniatures. And the director Tsuburaya Eiji's hometown was the best reason.

Angela: It's like a birthplace.

Miyoshi: It was already stronger than many theories, any theories. Why do you take it all the way to this city? "No, it's because it is Mr. Tsuburaya's hometown, that is why."

Angela: So, everyone could understand it right away.

Miyoshi: *That's how great Eiji Tsuburaya was*. But thanks to him, Sukagawa City made a very wise decision for a local government, and for us, it was a wise decision, but I think *it took a lot of determination*. Because it costs money, and we lost money every year. I am very grateful that the local government was willing to do this.

(*Interview excerpt end here*)

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In this part of the interview, it's possible to perceive a sense of crisis, a fear that tokusatsu art might die, which motivated artists to ensure that it could survive. The term is much like what Aby Warburg called *nachleben* (survival): the afterlife or *living afterward*. Warburg thought images have layers of untimely diffusion, which can survive numerous historical and social periods,

be buried in oblivion, and be considered lost; yet such repressed images can return. Perhaps when images are close to dying, their last breath reawakens something lost. Christa Blümlinger stated that cinema and the archival impulse were intertwined and gave birth to our modern understanding of them. The connection between moving image and archiving procedures are also present in this study object.

"The wish to preserve something at the present is a kind of temporal imperative that leads to the anticipation of a future gaze, and the construction of a cultural memory (as Aby Warburg, Maurice Halbwachs, or Jan Assmann would understand it): a memory formed by techniques of storage and transmission." (Blümlinger, 2020, p.222). In a contemporary form, the archive is also encompassed by the digital; and the impossibility of safeguarding the artwork's materiality. Following the progress of image and object decay, the conservation of different stages of an artwork's existence ensures the migration and interpretation of meaning for future generations. The crystallization of a moment by an artist and the conservation of materiality and meaning by curators and researchers all come together in establishing archives and institutions. The decomposition of materiality and the impossibility of total conservation means, in a sense, that artworks are between the dead and the living. But how would images be able to travel through a different temporality?

To partially answer this question, Warburg thought of emotive formulas where human memory would be stapled in the artworks, like ancient movements of life and desire that inhabited a specific period in time. That is, the *pathosformel* (*pathos formula*), a temporal movement that causes affective intensity that compels the movement in the body under the influence of its *pathos*. The memory, the style, and the pathos of the image would be frozen in time, and as they come back, they would be able "(…) to turn these *fossils of movement* [*du movement*] into genuine organisms defying chronological time, that is to say, into *moving fossils* [*en mouvement*]. (Didi-Huberman, 2017, p.124). Whilst gathering a morphology of pathos, Warburg sought in the works of Goethe and Nietzsche. Goethe was a morphologist that studied art as an interval in the historical moment, utilizing theories of how human emotions would give bodily form to it. From Nietzsche, the power and dynamic of pathos would become powerful themes. This background led Warburg to think of the psyche, gestures, and the power to express emotion embedded in artworks. In a sense, the human psyche would leave its marks and traces as visual formulas that could disappear and reappear at different times.

The awakening, or the return of images, would be powered by pathos, an emotion that dilatates the fissures of time and social memory. Warburg also saw that the survival of images brought a dynamic inversion of time, a reawakening of tensions, much like Nietzsche suggested of *ethos* and *pathos*, i.e., Apollonian and Dionysian. Warburg sought his ideas also in the surging of modern psychology, especially in Freud, that the repressed emotions often returned and created a haunting effect. The bearing moment where art starts to exist, in the linkage of artist's *techne* and craft, raised by their sociohistorical experience, produces a sort of symptom of its time. "It is clear that in Warburg's view of the powers of the image, both the psychological and plastic powers work at the level of the sedimented material – impure and agitated – of an *unconscious memory*." (Didi-Huberman, 2017, p. 198). Warburg actively researched suppressed images and art periods classified as a stylistic downfall, challenging respective narratives in Art History, primarily related to the purity of Antiquity. Much like his predecessors, Burckhardt, Goethe, Nietzsche, and Freud, among others, he sought to uncover repressed elements within cultural memory.

> As a symptom formation, it is, in a certain sense, a survival that takes on a body. A body agitated by conflicts, by contradictory movements: a body agitated by the eddies of time. It is *a body from which there suddenly springs forth a suppressed image*. This is how Warburg must have understood it as he observed the tenacity, the springing forth, and the anachronism of the survivals against a background of forgetting, of latencies, and of repressions. (Didi-Huberman, 2017, p.198)

The transmission of social memory – in a way, of legacy – is built in the bringing forth of images, in the power of *pathos* to reawaken the social body, in this case, of artists and people that thought that they should bring back an almost forgotten art. That they should not let it die. Awaken by the *pathos* and affection passed onto them, in this contemporary example, it's possible to see how the return or the survival of art happened in times of crisis, in times where instead of saying *farewell*, they decided to create a *museum*, and *archive*, to be accessed for future generations.

The idea of creating a space to hold tokusatsu art and miniatures came from a conversation between artists and industry-related people who shared their affection, not only for the objects but for the craft and the artists they admired and aspired. In their conversation, they thought it would be nice to create a space for this type of art. A kind of art that had not received much space or recognition apart from a select group of affiliated artists and fans. "We had the idea of holding a

ceremonial *Farewell Tokusatsu* exhibition to express our gratitude and condolences spectacularly. After many twists and turns, the title was changed to *Tokusatsu Museum*." (Interview excerpt, Miyoshi, K.). The ceremonial *Farewell* was because with the arrival of digital composition and 3D CGI, already with the decline of analog techniques use, perhaps it was the end. Additionally, many materials and miniatures had already been consistently discarded and disregarded for logistical, monetary, and other reasons.

In terms of research, archival potential, and value, it had survived in the hands of a few people that had documented and secured these art forms. The burial of Tokusatsu and Anime's aesthetic connection, and its fundamental role in creating many aspects of the contemporary Japanese media, happened because it was not given enough attention. It is highly unknown to the main public that their beloved Anime and Tokusatsu shows struggled to exist, that the DIY process was intense, and that many materials could not be preserved consistently. Miyoshi Kan told me during our interview that many people assume that because a show was a hitmaker, it probably gets to be maintained. Which, unfortunately, is far from reality. The situation of preserving and archiving the art of deemed popular shows covered in this research is far from a glamorous stand-off. The materiality of art, especially the DIY analog tokusatsu and animation, was consistently discarded, mainly being preserved by some artists and fans that would gather these materials. Although digital materials have more accessibility, the platform of preservation that envisions the technological life of such data and continuous backup is one of the contemporary challenges. The materiality of media is pervasive, be it analog or digital, and it challenges what artists, curators, museums, and archiving facilities can provide for the public and posterity.

"The times which have survived are not times which have slipped away; they are times which are buried just under our feet, and which, as they reemerge, cause us to stumble in the course of our history." (Didi-Huberman, 2017, p.218). Although tokusatsu and animation had a close relationship of breaking through the limitations of their respective aesthetic areas while widening their capacities through the collaboration between artists that harnessed different styles, this history has remained largely buried.

> Be it ever so eloquent; the moving image is like a witness who is unable to describe an event without an intermediary. The ability to transform it into evidence, true or false [XL], is inherently linked to a decision to preserve, alter or suppress the memory of the

> circumstances under which the image was produced. The loss of the moving image is the outcome of an ideology expressed by the very object that made it possible. (Cherchi Usai, 2001, p.31)

When Paolo Cherchi Usai published *Death of Cinema*, he stressed the importance of moving image discourse, according to which the decision to preserve, alter, or suppress the memory of image production can transform its evidence value. Unearthing evidence of circumstances and bearing witness in a chain of events can ensure that certain image aspects can survive. To bear witness and preserve artworks against the odds of time and historicity provides a possibility of survival. The loss or death of a moving image is not only a result of certain ideologies surrounding its making, but the potential transformation it can reach through time.

Following Warburg and Michaud's interpretation of *Atlas Mnemosyne*: "(…)demanding that their interpretation renounces the illumination of meaning in order to concentrate on relationships and structures." (Michaud, 2007, p.240). The structures and relationships that are contained and uncontained by the art object. The relational structure bounds people's witnessing and harbors distinct connections. One of the most memorable parts of Miyoshi Kan's talk, which will be displayed in the coming pages, was that preserving objects guarantee that people in the future will have a good time. In sum, he said: "*It will be a gift."* To witness and stand before an image and build relationships in its elements, bear its time and history once more, is in itself the gift.

6.4. Interview Part 4: Archiving and reviving Tokusatsu history

Angela: And finally, the place was set. Also, 2017 was the year that ATAC was born. I saw that the ATAC website has a communication feature so people that have old materials and miniatures can consult about preservation. What kind of support does ATAC provide for the preservation of such materials?

Miyoshi: No, this feature is case by case. If someone says, “I want to preserve this small item,” I'll take it to Sukagawa City on the bullet train. But of course, they have to consult with us to see what kind of item, size, etc.

Angela: What happens after the consultation?

Miyoshi: It depends on the object. For example, if someone says, “It's a toy I bought when I was a kid,” I refuse to accept it. We prefer an original, which was used in a tokusatsu work. But first of all, we also thoroughly investigate to ensure that the item is really what they say it is. But you know, the best thing is for the owner to keep it forever. There must be a reason why the person has it. That should be respected. So, I think there are many different cases. The most common case is when the owner passes away. The person took good care of it, but it’s not that important to the family when the person passes away. The house has become too small, and they are in trouble. Sometimes, they would like to put them on the Internet auction or sell them. Or they don’t need money; they just want to get rid of it. Most of the time, they get sold or thrown away like that. Some say it’s good because if it’s sold, it will go to another owner, but maybe over time, it will disappear. So, for us, or the public, it is gone. When they are thrown away, they are melted down or burned as industrial waste and gone from this world. So, at the very least, I would like to prevent these two things.

Angela: Also, the person who received an original item could be old at this point in time.

Miyoshi: So, there are several model cases for this, but it's, you know, really case by case. We won't know until things happen, and we have to make decisions.

Angela: I think that with ATAC's support, there's a better chance that items could be preserved instead of thrown away.

Miyoshi: We want to avoid those tokusatsu items being thrown away or sold off as much as possible. If we do this, then everyone will be able to see them. In other words, we can put them to good use. We want to exhibit them in exhibitions, publish them in books, etc., so that people who see them can understand the things in front of them. We want to increase this as much as possible.

Then, each person who sees it will think, "Oh, this is what it is like." It becomes an experience. But if we cannot do that, then even if the work is preserved, if it is left in a box for a long time, it is as if it is not there at all. So, preservation is the most important thing, but it is meaningless unless it is put to good use. *Therefore, I would like to make it possible to do both.* So, how to make it possible to do both? The original owner of the property and us, and, well, we all have to think about it.

Angela: There is also the need to discuss this socially as well, I agree.

Miyoshi: Yes, because we have been able to get through this by consulting with everyone. Mori Building helped us, Sukagawa City helped us, and the Agency for Cultural Affairs helped us.

Angela: The great thing about it is that there are so many people coming together and working together on this issue of preservation of tokusatsu and anime and expanding it. I thought that this collaboration was really wonderful.

Miyoshi: Do you know the movie *Raiders of the Lost Ark* (1981)? It's Spielberg's, Indiana Jones. The first one. Do you remember the last scene? Indiana Jones finally gets his hands on something called the Ark at the end. Do you know what happened to that arc?

Angela: I don’t really remember it.

Miyoshi: They end up being put in boxes and stacked in a warehouse. It’s a huge warehouse, and the camera pulls out, and that’s how it ends, with all the different treasures being boxed up and piled up in the warehouse. It’s a very ironic end; the treasure you risked your life for “is salted,” meaning that if you leave some food pickled in salt in a jar, you won’t eat it. If it is salted, you will not use it.

Angela: Yes, I understand the analogy you are making.

Miyoshi: Yes, this way is not useful. And it looks like you are not even thinking about what you are doing. What we should do is record and keep information about what kinds of things exist and make sure that everyone knows about them.

Angela: I’d like to ask a little bit about the purpose of research in the ATAC, preservation, and so forth…

Miyoshi: This is the same as what I mentioned about Indiana Jones: *to be useful*. It is also important to keep them in a safe place so that they will not be thrown away or lost. Once that is secured, it is time to put it to good use. In other words, we need to increase the number of opportunities for people to see the work. In museum terminology, that is, *spreading awareness*. Spreading the word and thereby educating the public. By doing so, we stimulate the viewers. It is like education. You can't understand the value of something unless you see it.

Angela: Yes, I think it is necessary to see the real thing.

Miyoshi: You have to see the real thing. Well, you can look at it on a computer if you have no other way to see it. But I think there are things you can understand and things you can’t get in that way.

(*Interview excerpt end here*)

6.5. Interview Part 5: The challenges of Digital Scanning and Restauration

Angela: Going back to the preservation topic, I know that Ks Design Lab inc. (株式会社のケイズデザインラボ) has collaborated in the preservation of creating the 3D data archive of the *Battleship Mikasa* miniature from *Battle of the Japan Sea* (*Nihonkai daikaisen*, 日本海大海戦, 1969), which the original is preserved and maintained at the Sukagawa Tokusatsu Archive Center. The 3D data archive was part of the exhibition *The art of Special Effects Production Designer Yasuyuki "TAIKO" Inoue* (Sat.19 March – Sun.19 June 2022, Museum of Contemporary Art, Tokyo). Are you planning a digital archive for preservation and sharing in the future?

Miyoshi: In the big picture, we should do all sorts of things for preservation. I think digitization is one of the ways to do that. What is convenient about digitization is that it makes it easier to share and also for backup. Even if the real thing is lost for some reason, if the data is still there, you can still understand many things, even if it's not as good as the real thing. With miniatures, three-dimensional objects are a bit of a hurdle, so the idea was to scan the materials as they do with anime drawings in more familiar terms.

Angela: Oh yes, I think that's right. If you scan the animation celluloid drawings, you can easily digitalize them.

Miyoshi: Well, to put it simply, it means that it opens up a lot more possibilities than just preserving the real thing. As I said earlier, for example, celluloid pictures deteriorate rapidly over time. The components of celluloid paint and, for example, the outline lines are made of carbon, and when the carbon comes into contact with the paint, a chemical reaction occurs, causing the carbon to lose its color. If you look at old celluloid pictures, these outlines are often missing. I don't know if you knew about this. I think you're probably going to see a lot of those things in the future. You can't prevent that. Or, to go further, even film deteriorates over time. Everything deteriorates over time. But at a certain point, the more accurate the digital data is, the more it can be backed up.

The real thing is losing its outlines and the charm of the picture, but because we digitized the picture before it lost its charm, we can see that it used to be this beautiful. In other words, a real backup. But the real thing is still the real thing and has value. No matter how much it has deteriorated, the coloring and other aspects of the digital work may still be beautiful, and for example, if it is a pencil drawing, let alone a celluloid drawing, you can see the pressure of the brushstrokes. Now that it is possible to capture such things in digital data at a very high resolution, it may be possible to recognize such things just by looking at the data. However, it's still not as good as seeing the real thing. If you have the real thing, then you can actually see it. But in that sense, data is necessary because everything deteriorates.

The other thing is that even if you think, "Well, let me see the real thing next time," it's still stored at the bottom of the warehouse. But for example, there are people in Hokkaido that might want to see it. They want to know how we are going to send it. Like, what if it's in Brazil? I mean, it's hard to transport, it's hard to handle, what if you drop it, what if it tears, what if it gets wet with water or in the rain? In other words, the real thing is that much riskier. The risk is reduced to "I'll send you the data for now, so if you just need to know the pattern, you can look at this data." Moreover, you can make as many photocopies as you want, physically. Let's leave aside the issue of rights. In other words, it can be shared. It can be viewed even on the other side of the world. It makes many things more manageable. It's a significant advantage. That's why we should go digital. To have a backup, you also need a place for that backup. Even if you say, "No, why don't you just use the cloud," you don't know if you can rely on the cloud. There are all sorts of things that can happen. Data can't be preserved unless the physical factors are in place. It becomes obsolete if I burn the data on media that can't be read anymore.

Angela: There is, isn't there? Well, we can see things in different media formats, like VHS.

Miyoshi: But there are also things like, "What's this? It doesn't have enough resolution at all." I'm sure they'll say, "This was scanned 20 years ago". I think what I am saying now will be even more in 10 years. They will say: "Why did you take such a low-resolution photo? If it were now, I could shoot 1200 DPI immediately." But if you want to shoot something like that now, 1200 DPI, it's still impossible. So, there are limits. Data is not a panacea. But it is better to have

it. So, it would be nice if ATAC could convert all of its archived materials into digital data, which would be ideal. But it's impossible.

Angela: Yes, I think that's true. It has its limitations, but I would like to look at the Mikasa project and, in the future, other projects made by ATAC.

Miyoshi: I think I should explain the situation properly. The reason we converted Mikasa into 3D scan data like that was, to a certain extent, an experiment, a trial. And the year before that, there were two monsters, *Aboras* (アボラス) and *Vanilla* (バニラ) from *Ultraman*, and their heads are still there. And another one scanned was the mask of *Strong Zaborger* (ストロングザボーガー) from *Denjin Zaborger* (電人ザボーガー, 1974) was still there, and they scanned what was left of it.

Obs: 3D scanning / K's Design Lab Inc access, click on the following links:

1. Banila (バニラ, *Ultraman*): https://skfb.ly/6YPXB
2. Aboras (アボラス, *Ultraman*): https://skfb.ly/6YPXz
3. Strong Zaborgar (ストロングザボーガー *Denjin Zaborger*, 1974): https://skfb.ly/6YPXC)

Angela: I see.

Miyoshi: To begin with, there is a subsidy project called the Media Arts Archive Promotion Support Project of the Agency for Cultural Affairs (文化庁のメディア芸術アーカイブ推進支援事業) which you can apply for every year and if you pass the screening, you get a subsidy[350]. That's how the system works. I applied for it and was accepted, so I did it. We tried to do something about conservation as an ATAC issue. Usually, you have to prepare a place to put things and fix damaged parts. We have to take care of the humidity, so we have to air-condition the site properly. That's how we take care of it. You can't completely prevent deterioration over time, but you take measures to slow it down as much as possible.

[350] For the *Media Arts Archive Promotion Support Project*, see https://www.bunka.go.jp/shinsei_boshu/kobo/93659601.html (Accessed 23 July 2022). Additionally, the results of each year's subsidiary awards are listed on this page.

Well, of course, we made a list, researched, and kept a record of it. If the actual object is preserved correctly, it is OK to put it in a safe place. However, as I mentioned earlier, I want to digitize from various perspectives. This will open up a variety of possibilities. So, for the animation, it can be done with a copier or scanner, and anyone can do it. For example, next time, I will organize the materials for the animation *Nadia: The Secret of Blue Water* (ふしぎの海のナディア, 1990). If next, I want to hold an exhibition, we can scan the materials and make a catalog of hundreds of items. That's good. On the other hand, it would be ideal if we could scan everything and preserve all the materials we have, but that is not possible. We have to start with those that have a chance to be utilized, such as by exhibiting them in an art exhibition. Physically, time-wise, and cost-wise.

If we do that a few times, we will be able to produce more and more works that are, dare I say it, valuable enough to be exhibited in an art exhibition. I think it is good that the things highly significant for the viewer to see are being digitized more and more. It will be included in the catalog. If we want to create a virtual museum, we can do so. That is why our policy is to start with things that have a chance to be seen in this way. But that is for the flat surface of animation.

It has always been a challenge to find a way to deal with Tokusatsu and miniatures. Nowadays, 3D scanning has developed, and the cost is getting cheaper and more accurate. However, we don't have such facilities, nor do we have the money to pay for them. So, if the Agency for Cultural Affairs had asked us, "Please give us the cost of taking 3D data of these miniatures," we probably wouldn't have passed the screening. Instead, the question should be, "Why are you shooting this?" Oh, we need to keep a record of why and how the film was made to make them available to the public. That's what I'm trying to do. Then, the next time you do a 3D scan, you can say, "I'm thinking of doing a 3D scan too, so this will be helpful". So, I asked them to let me do it, and they agreed. In other words, it was an experiment.

Angela: It's a step-by-step project.

Hiroshi Miyoshi: We do this because the monster (*Kaijū*) that I mentioned earlier in *Ultraman*, their suit heads are made of rubber or latex. Sometimes they are made of rubber or sponge-like materials, and they rot. Just like celluloid pictures in animation, the suits of the monsters in tokusatsu are made of rubber, so they lose their shape rapidly. It undergoes chemical

changes and melts. Since they deteriorate over time, their appearance has probably changed over the past ten years. So, there is a high possibility that in another 50 years, it will be a wreck. If that is the case, the only way to preserve the appearance of this object is to do a 3D scan of it. So, one of the reasons is that the age-related deterioration is too severe over time.

Angela: If those items hadn't been 3D scanned, the deterioration...

Miyoshi: Yes, it's just going to keep deteriorating. You can't stop that, physically. That's why I'm going to take pictures. Also, I'm doing it because no one else is actually scanning miniatures and other three-dimensional objects to see how well they can be photographed. This is the second reason for doing it. And in that case, we can find out how much it costs and how many days it takes if we do it. That's why it's an experiment. So, we did two suits, and these are two of the few things that Tsuburaya Productions has had for many years, from when *Ultraman* was filmed in 1966. The truth is, they were thrown away, the rest of the stuff. Or they were imitations made later, so compared to the originals that were first made back then; they have to be treated as something else. Anyway, the aim was to preserve these precious things in digital data. We do this on an experimental basis, once a year. The archive promotion support project is a system. We did it in 2020 and finally made the data public.

We decided to try something more significant for the second edition. I mean, the 6-meter *Battleship Mikasa*, which was made for the movie *Battle of the Japan Sea* (*Nihonkai daikaisen*,日本海大海戦,1969), was restored three years before that using the same Agency for Cultural Affairs promotion support project subsidy. Mori Building is the secretariat for this project that deals with the Agency for Cultural Affairs, and we are the implementation team. That's what we've been doing. What you mentioned, Angela, is the 3D scanning of the *Battleship Mikasa*, but also, the original has been restored over the past three years. The reason for doing this is that it is a huge object, six meters long, difficult to transport and handle, and something that one person would never be able to carry alone. Can such a colossal object really be made into a 3D object? If so, how much time, effort, and money will it take? Until you try, it's unpredictable.

Angela: Yes, if you try, it is possible to understand.

Miyoshi: So, how accurately can you shoot that? There are a lot of small parts because it's a battleship.

Angela: When I saw the 3D image, I was like, "Wow, this must have been difficult to make!"

Miyoshi: I also thought there would be limitations. I expected that certain aspects might be raw data. I don't know how accurately it can be taken. Then I thought, okay, let's give it a try. There must be some advantages to digital photography. But you don't know how much benefit there is until you convert it into data. That's why we did it. But now that you've seen it, you understand, don't you? But the point of the *Battleship Mikasa* database was that we could also utilize it afterward. You visited the *Yasuyuki Inoue Exhibition* at the Museum of Contemporary Art Tokyo that was on until last month, right?

Angela: Yes, I went.

Miyoshi: The 3D scan was on display, wasn't it? So, it would cost tens of thousands of yen to transport the actual Battleship Mikasa, which is six meters long, on a 10-tonne truck, and it would take about six people to transport it once. Of course, you can't put that thing on as it is, so you must dismantle it once. To dismantle it, we have to call in a specialist miniatures contractor to come to the site, disassemble it, and load it. When it arrives at the Museum of Contemporary Art Tokyo, the same people must assemble it again. Then the number of days, people, and cost would be enormous. You can do it if you have the money and the people. But unfortunately, that was not possible with the budget of the *Yasuyuki Inoue Exhibition*. But we were able to exhibit it because we had 3D data. In other words, the accuracy of the 3D data was better than we had expected. It was good, wasn't it?

Angela: It was! When I entered the exhibition, there were old miniatures and some materials. I've looked around for some time and was paying close attention. And then, as a viewer, I connected the beginning of the exhibition of the old materials with the digital 3D scan at the end.

So, the image of the future came. How can we preserve this legacy moving forward? I thought that it was a good point of the exhibition.

Miyoshi: So, we did not carry a six-meter-long one, but you can get a sense of its scale and detail. Also, the accuracy was good, and you could feel the texture to a certain extent. Of course, if you see the real thing, you can see it in a higher resolution. But even if that is not the case, it was there. But there are also aspects where digital is better; for example, the actual film is at the *Sukagawa Tokusatsu Archive Center*. If you go there, you can see the left half. But although they are placed at the center, they are on the left side, and the entire wall of the center's storage room is made of glass so visitors can see inside. In other words, you can't see the other side, the top side, and the bottom. But you can see it all in the 3DCG data. Surprisingly, when people say, "Oh, yes, that's right." But I didn't understand it until I made the data and screened it.

Angela: Oh, you found it while doing it.

Miyoshi: I mean, "Oh, you only see half of this when you go to Sukagawa." We could go into the storage room and look around 360 degrees, and if we climb up on a high stepladder or something, we can see it from above, but we can't see it without doing that every single time.
Of course, if we spent millions and put it in the Museum of Contemporary Art Tokyo, we might be able to see and go around 360 degrees. Well, that's not easy to do.
Instead, it took two full days to shoot with CG, and we had to ask for a first-class product, Ks Design Lab. Incidentally, Ks Design Lab was a studio that Mori Building was very close to, so it's not that we initially knew them. So, it was half an experiment.

Angela: I think this is a new way of doing things.

Miyoshi: I hope they find it exciting and try to do it as well.

Angela: When I went to the exhibition, I bought the three volumes of the book *Toshio Miike's Secret Record of Tokusatsu* (三池敏夫の特撮秘聞録, vol.1,2,3) published by the group *Fukuoka Tokusatsu Zadankai* (福岡特撮座談会), a group of people interested in creating a

community for people interested on the theme, and also conduct interviews and research[351]. I think that fans of Anime and Tokusatsu have a lot to do with the current situation in Japan of reviving this art form or the lost connections between the two genres. Of course, it is not a new movement, but it is also evident at this moment. The relationship with fans is an important point, isn't it?

Miyoshi: I think it's because these people are fans, but they are fans with intellectual curiosity or action. That's why they do their research. Research doesn't mean just looking at images all the time and developing ideas in your own head; it's more like doing interviews with the people involved.

Angela: I'm interested in researching the connections between *Tokusatsu* and *Anime*. I think NPOs, fan groups, and research have been happening, more precisely, since 2010. However, I had a feeling that these movements did not translate in the academic community. I thought that the academic community should also pay attention to it. Of course, in Japan, people understand how important it is, but I also believe overseas fans and interested people would also like to know and participate. So, I decided to try to realize some research about it.

Miyoshi: So, you think that from around 2010, there was a change worth studying?

Angela: From 2010, I saw a clear movement to reconstruct the legacy of Tokusatsu and Robot Animation. Maybe it came from a sense of crisis. So, maybe in the last ten years, artists have thought about their legacy and how to convey it to this new generation. This movement coming from the artists themselves interested me. So, I started to research how this came about.

Miyoshi: It's not easy, but yes. People like Hideaki Anno, Shinji Higuchi, Onoue, and Miike, are also involved in ATAC and are doing creative work; they are creators. The creators were fans at first when they were kids. They saw Tokusatsu and Animation when they were kids and wanted to make something they admired, so they became creators. So, I think it's natural for

[351]*Fukuoka Tokusatsu Zadankai* (福岡特撮座談会) online blog, where they register and promote activities and meetings. See https://ameblo.jp/fukutoku1994/entry-12260836352.html (Accessed 23 June 2022). In their first posting, they mention the exhibition named *Godzilla Exhibition - The Great Monster, the Paths of* Creation (ゴジラ展-大怪獣、創造の軌跡) Dates: 15 Jul (Fri) - 31 Aug (Wed), 2016, at the Fukuoka Art Museum, as a catalyst for making the group. The exhibition was planned almost simultaneously with the release of *Shin Godzilla* in 2016.

them to see their work as a legacy. We were fans at first. But it's also possible that the earlier people were never just fans. There are all kinds of roots. Some people wanted to make live-action films but could only get an opening in the animation world.

Angela: That was the case for Tomino Yoshiyuki.

Miyoshi: Yes, that's right. Then some liked the manga but didn't understand the anime. I think there are people like that. And I think it was the same with Tokusatsu, or, when they were children, there were no such works. They created it themselves. For such people, when they start their work, they have their hands complete with what is in front of them. So, what our predecessors have done is in a different genre. There are live-action films and manga, which are legacies within their genres. But people who have been doing it since the beginning, whether it is Tokusatsu or Animation, are only doing their work and what is in front of them, so they don't usually think they are leaving or doing a legacy.

Angela: I think so; the people since the beginning were trying to make art with what they could find.

Miyoshi: After that, they saw the legacy, the work of those who came first, and Hideaki Anno and his team thought it was interesting, so we have predecessors. So, we already have a legacy. If that is the case, I think it is very natural that we should cherish that legacy. They have a sense of gratitude for the Anime and Tokusatsu that raised them as children, and they really can't allow these things to be discarded and lost because of carelessness, as I repeat many times. So, I don't think I am doing anything exceptional, either. I just want to keep the things I like as long as I live. But if you do that, the following people, the people after you, your juniors, and your descendants, will definitely have a good time. *It will be a gift*.

(*Interview excerpt end here*)

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The interview I conducted gave me an account of some artists movements that I suspected were on course in Japan in the last ten years. However, these movements only make more sense when you understand the long connection between artists working in Tokusatsu and Animation. It provides a more profound meaning as to why these preservation efforts started and what they can mean moving forward. One of the elements that surprised me is the scale in which things happen, the local and independent movements attached to larger institutions. The stages of capitalism seem to engulf everything that concerns human life, and perhaps it can be true to some extent. Living in Japan has provided me with an amusing experience about the differences between Japan in discourse and Japan in its daily, mundane life. Contemporary Japanese media has been shaped by DIY approaches and artist collaborations on the micro and macro scale. By mapping recent efforts in preserving tokusatsu and animation practices, the range in which their relational practice needs urgent research attention became more prominent.

It started with a dinner among artists and friends in the second decade of the twentieth-first century, celebrating *Evangelion: 2.0 You Can (Not) Advance* (エヴァンゲリヲン新劇場版: 破, 2009) completion. Their idea of preserving tokusatsu and reaching artists, people working in museums, and the moving image industry created a spark that ignited other preservation efforts. Although mentioned in the interview, in this session, I will explore some of these connections in a more concise manner.

Besides the *Tokusatsu Museum* exhibition in 2012, the Japanese Tokusatsu Archive (日本特撮アーカイブ) started conducting a survey on Japanese Tokusatsu commissioned by the Agency of Cultural Affairs to clarify tokusatsu cultural aspects and also conduct interviews. The *Japan Tokusatsu Archive* started with research activities but has evolved to gather many different activities related to tokusatsu. In contemporary times, they have established a cooperative system for the preservation and succession of tokusatsu culture in cooperation with the *Tokusatsu Culture Promotion Project Executive Committee* (特撮文化推進事業実行委員会, 2018) established by Fukushima Prefecture, Sukagawa City, the local Chamber of Commerce, and Industry, ATAC (2017), vocational schools, as well as with the *Sukagawa Tokusatsu Archive Center* (2020) and the *Tsuburaya Eiji Museum* (2019), both located in Sukagawa.

The archiving of materials by ATAC, *Japan Tokusatsu Archive*, in cooperation with Sukagawa City in Fukushima Prefecture, led to the opening of the *Sukagawa Tokusatsu Archive Center* on November 3, 2020. In 2018, the restoration of the Battleship Mikasa miniature used in the movie *The Great Battle of the Sea of Japan* was carried out as a test case with the support of the Agency for Cultural Affairs. These different projects have been carried out in the last ten years and have remained largely unknown to the academic field. Thinking about exploring these developments and its interconnections, I went on a field trip to Sukagawa city to conduct interviews at the *Sukagawa Tokusatsu Archive Center* and *Tsuburaya Eiji Museum*.

6.6. Interview at Sukagawa Tokusatsu Archive Center

Interview with Nagoya Ryo (名古谷, 諒)

Curator at Sukagawa Tokusatsu Archive

学芸員、須賀川特撮アーカイブセンター

Realized on 20 August 2022 at the *Sukagawa Tokusatsu Archive Center*[352]

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Angela: Thank you for receiving me and allowing this interview. First, could you tell me how the story of the *Archive Center* connects with the *Tokusatsu Museum* exhibition (2012) made by Hideaki Anno & collaborators and with ATAC?

Nagoya: The first step in the process was that Mr. Anno and his colleagues came up with the idea of preserving the materials used in the tokusatsu production. The first step was to hold the *Tokusatsu Museum* exhibition in 2012, but after the exhibition was over, there was a problem with where to put the materials collected. Additionally, Eiji Tsuburaya was born in Sukagawa, and we have been focusing on promoting him and Tokusatsu as one of the policies to promote the city after the *Great East Japan Earthquake* (11 March 2011). Sukagawa City was trying to promote Tokusatsu, and the artists were asking for a place where they could preserve the tokusatsu materials. Originally, this building was a community center that was closed, and so Sukagawa city proposed this place for ATAC to create an archive for tokusatsu materials.

Angela: Is there any relation between the *Sukagawa Tokusatsu Archive Center* (2020) and *Tsuburaya Eiji Museum* (2019)?

Nagoya: The city hall of Sukagawa city has the Department of Cultural Promotion Division, which promotes the culture of Sukagawa. They established the *Sukagawa Tokusatsu Archive Center* (2020), and there is a connection between them since they share some similar goals.

[352] For *Sukagawa Tokusatsu Archive Center*, official website see, https://s-tokusatsu.jp (Accessed: 2022 August 30). Address: 22 Nakachimae, Hashirata-aza, Sukagawa City, Fukushima 962-0302.

However, I think that the *Tsuburaya Eiji Museum* has cooperation with Tsuburaya Productions too.

Angela: What are the main activities of the *Archive Center*?

Nagoya: After conservation and preservation, we need to collect the materials. Collecting, preserving, and in some cases, restoring. The main purpose of the archive center is to collect and preserve. It differs from a museum in that the main purpose is to make exhibitions. Of course, one of the purposes of the archive is also to display the objects. Therefore, the materials we have in-house are usually exhibited, but we don't use the word exhibit or exhibition in the context of a museum. However, since we are preserving things, we are making them available for everyone to see, aren't we? That is why preservation is the main focus of the museum. In addition, Sukagawa City also wants to promote the culture of tokusatsu, and in that sense, we also hold workshops, some of which are held at the Archive Center, and others are held at the Ward Office.

We are currently holding a workshop for Elementary and Junior high school students in Sukagawa City to spread tokusatsu culture. We also aim to nurture future talents who could be involved in tokusatsu. That is why we are holding these workshops. There are workshops around four times a year where they can learn simple techniques used in tokusatsu. Another is a larger activity called *Tokusatsu Jukku*, which brings together Junior high and High school students in Sukagawa City, and also the director Kiyotaka Taguchi of *Ultraman* series, such as *Ultraman X* (2016), and *Ultraman Z* (2020).

Angela: One of the restoration projects was Battleship Mikasa.

Nagoya: That's right. This is one of the projects that we have been working on with money from the Agency of Cultural Affairs. And the first step was to fix the Battleship Mikasa.

Angela: The Sukagawa Tokusatsu Archive Center has been open for two years now, what are the goals for the future?

Nagoya: First of all, I would like to continue the small workshop that I am in charge of every year for the children of Sukagawa City. The other big workshop, *Tokusatsu Jukku*, is run by the director of the center, and he wants to continue the program every year for about 10 years. After that, as for this Archive Center, of course, there is a relationship with ATAC, but it would be great if we could collect and store the tokusatsu materials from various places in here. While expanding the space for preservation, we would like to promote the collection and preservation of tokusatsu materials from all over the country.

(*Interview excerpt ends here)*

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After this conversation, I was allowed a tour, and the *Sukagawa Tokusatsu Archive Center* allowed me to take photographs. The following images are from the first-floor *Miniature Archives*, and then the second-floor pictures of the *Miniature Set Plan* designed by Toshio Miike. All of the following photos were taken by photographer Mitsui, Takeyoshi (光井武義).

Figure 22 Miniatures storage (Sukagawa Tokusatsu Archive Center)

Figure 23 Miniatures storage 2 (Sukagawa Tokusatsu Archive Center)

Figure 24 Miniatures storage 3 (Sukagawa Tokusatsu Archive Center)

Figure 25 Restored Battleship Mikasa miniature from Battle of the Japan Sea (Nihonkai daikaisen, 日本海大海戦,1969)

Figure 26 Giant Warrior original puppet for Giant God Warrior appears in Tokyo (2012)

Figure 27 Second Floor: Miniature set plan designed by Toshio Miike

Figure 28 Miniature set plan detail. The sign reads Monster Club (怪獣倶楽部), designed by Toshio Miike

6.7. Tsuburaya Eiji Museum

Interview with Ojima Yoshihiro (尾嶋, 良浩)

Director of Tsuburaya Eiji Museum

(円谷英二ミュージアム館長)

Realized on 20 August 2022 at the Tsuburaya Eiji Museum[353]

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Angela: First of all, thank you for giving me some of your time for this interview. There has been a movement in Sukagawa city toward celebrating *Tokusatsu*. The Tsuburaya Eiji museum was opened in 2019. Was there any relationship with the opening of the *Sukagawa Tokusatsu Archive Center* (2020)?

Ojima: Of course. There are some connections, but they have different purposes. The purpose of this Museum is to inform people about Eiji Tsuburaya's life, his achievements, and so on. The purpose of the *Sukagawa Tokusatsu Archive Center* is to promote the world of Tokusatsu, which was Tsuburaya's forte, and to pass it on to the next generation. In a sense, the *Archive Center* was also created with the aim of conveying the techniques and tokusatsu production methods to the general public and to archive those techniques and production methods utilized so far.

The purpose of our exhibition is to inform the public about Eiji Tsuburaya's life and the content of his various works. For example, the *Imagination Atelier* consists of six fields, ranging from Fantasy Biology, Fantasy Mechanics, Tokusatsu World and Environmental Science, Tokusatsu Astronomy, Tokusatsu and Fables, and Tokusatsu Film Studies. The exhibition is categorized into these six fields, and each of them has a display of works. In addition, each session has many books under it, and this was made so that you can further study more about your area of interest. Anyone can look at the books, not only citizens but also people from other towns. In this sense, the director's last lesson is that if you can find something you are interested in while you are young, your life will be very fulfilling. The library is designed to allow visitors to explore their

[353] *Tsuburaya Eiji Museum* Address: 4-1 Nakamachi, Sukagawa, Fukushima 962-0845 (Sukagawa Civil Exchange Center TETTE, 5th floor). Official website, see, https://s-tette.jp/museum/ (Accessed: 20 August 2022).

areas of interest while placing related books and reference materials in a wide area. In addition, the *Sukagawa Tokusatsu Archives Center* holds workshops and other activities, such as taking Tokusatsu footage using special effects technology. However, with this in mind, they target people in the upper grades of elementary or junior high and high school. However, this facility is operated with the hope that children will find something they are interested in from an early age.

Angela: I know that the *Sukagawa Tokusatsu Archive Center* collaborates with ATAC and Sukagawa City. In the case of *Tsuburaya Eiji Museum*, I know that there is, of course, collaboration with Sukagawa city. What are the other contributors to the Museum?

Ojima: Other than Sukagawa city, we have many connections with Toho Co. and Tsuburaya Productions. We had various exhibits with their cooperation. So, the talks about the Museum happened between Toho Co., Tsuburaya Productions, and Sukagawa City.

Angela: Oh, I see, so these companies and the city came together to realize the Tsuburaya Eiji Museum. Besides the exhibition space, what are some Museum activities?

Ojima: I'm not sure if you're familiar with the term "ちぎり絵" (Chigiri-e), but maybe you've heard of it. The cut paper is pasted in the shape of a monster, and finally, when the shape is made, it looks like this (he shows me some examples that the children made). We made these on the 7th of August; maybe we do it like twice a year during the summer vacation with Elementary students.

Angela: I see; I think the children must adore these kinds of activities. Also, it was announced the official *Tokusatsu Day* (特撮の日), on 7 July, with the registration certificate in 2019[354]. The date is also symbolic because it is Eiji Tsuburaya's birthday. Is there any event related to the day in the Museum?

[354] Official news of the *Tokusatsu Day* establishment, in the Sukagawa City webpage, see: https://www.city.sukagawa fukushima.jp/bunka_sports/bunka_geijyutsu/bunka_info/1001208 html (Accessed 2022 August 22).

Ojima: We have done different events in the past, it depends on the year, and we also collaborate with other events in Sukagawa city. This year there was a screening of *Shin Ultraman* (2022), I think it was July 10, and so we made a special corner with various books related to *Shin Ultraman*.

Angela: I see. I have noticed that there have been many efforts from Sukagawa city towards building Tokusatsu facilities and events through the years, collaborating with artists and companies. It is really an interesting revitalizing movement.

Ojima: Besides the ones you mentioned, there is also the "ながぬまラボ" (Naganuma Lab), which was a former indoor gate ball field, that is now a tokusatsu lab. It is also now the site of the Naganuma Festival[355], where they make the Nebuta (ねぶた) for the festival. They are making the Nebuta for the Naganuma Festival, displaying them, and allowing people to take pictures[356]. In addition to this, it is also a place where special effects and movies can be filmed. If you from here, it's still about 30 minutes. The direction differs from the *Archive Center*; there are also a few more buildings. And it's a little bit of a mess because they do the rough shooting there. It seems that directors also come and do some shootings, like director Higuchi Shinji and Toshio Miike. I heard they were filming some new project over there, but I don't know the details. I think the *Archive Center* also used the space for *Tokusatsu Jukku* (Special Effects School). I think there will be many movements in the future, as everyone is uniting in Sukagawa to make new initiatives.

Ojima: For example, the *Ultra Guide Map*[357]. (Ojima hands me the map). Sukagawa City is a sister city with Nebula M78 "Land of Light," so there are many Ultra heroes and monsters displayed around the city roads. You can also see *Ultraman* at the City Hall. Our museum is more about Toho movies of Tsuburaya Eiji. There is not so much about *Ultraman*, so it can be a little disappointing for the children. So, there are the *Ultraman* exhibits along the street, which serve as

[355] The *Naganuma Festival* started in 1985 and is an early autumn tradition. The festival attracts about 30,000 spectators every year. See https://www.city.sukagawa fukushima.jp/kanko_sukagawa/kanko_event/1003550 html and *Naganuma Festival Executive Committee* Website: https://www.ore-ore3z.com/naganuma-matsuri/ (Accessed 2022 August 24).
[356] Due to the Corona Virus Pandemic, in 2021, the festival had to be cancelled and so they made an exhibition called *Nebuta Exhibition* (ねぶた展), to showcase the constructed Nebuta at the Naganuma Lab. News of the exhibition, see: http://n-asc.com/2021/11/02/ながぬまラボにて長沼まつり%E3%80%80「ねぶた展」開催/ (Accessed 2022 August 30)
[357]The *Ultra Guide Map* English version, see http://m78-sukagawa.jp/wp-content/themes/sukagawa_new/img/guidemap_en.pdf (Accessed 2022 August 30).

a transition between the *Ultraman* and the *Toho era* of Tsuburaya. There are also *Ultraman* monsters exhibits on the first floor of the building.

Angela: Thank you so much for your time. I've been researching these new movements of Tokusatsu revitalization, and so it is exciting that many things have been happening in these last few years in Sukagawa.

Ojima: Is it all right? I hope I answered some of your questions. Please enjoy the exhibition and let me know if you have more questions.

(*Interview excerpt ends here)*

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The museum has two miniatures reconstructions of Large Pool, Stages 8 and 9, and the Horizont Warehouse of Toho Studios. They were recreated by veteran artist Shimakura Fuchimu (島倉, 二千六). The following images were taken by photographer Mitsui, Takeyoshi (光井武義).

Figure 29 Large Pool miniature by Shimakura Fuchimu (島倉, 二千六)

6.8. New Pathways of image-making

I have followed *Tokusatsu* and *Robot Anime* connections throughout this research. This section is an introductory essay on the impact of the preservation initiatives of the last ten years in image-making. It is still to be seen the full effect that the combination of research, preservation, and art-making led by these artists can assume. However, in this section, I want to explore how such movements have impacted the techno-social dynamics embedded in the *Shin Evangelion* and how it is connected to the upcoming art projects in the (シン – *Shin – New*) tokusatsu productions.

Following the experience of *Shin Godzilla* (2016), Anno came back to finish the *Rebuild of Evangelion*, with the fourth and final movie, called *Shin Evangelion: 3.0+1.0 Thrice Upon a Time* (シン・エヴァンゲリオン劇場版:‖, 2021). After the last film, Asuka, Shinji, and look-alike Rei wander on a destroyed Earth until they are rescued by Kensuke Aida and arrive at the Third Village. This refugee village is near the third impact location. The main characters that fight the EVA continue young, even though Touji and Suzuhara have grown up. Asuka, Shinji, and Rei (tentative) live in the village and perform tasks for the villagers. Shinji is crippled by the crime of causing the third impact and spends time alone at the former site of the NERV Branch, being taken care of by look-alike Rei and others. Since the clone Rei can't survive without treatment, she dies. This is followed by the Misato organization Wunder which is preparing for the final battle against NERV. Wunder makes a port in the Third Village, and Asuka and Shinji return as volunteers aboard Wunder. In the following scenes, Shinji confronts his father, Gendo, in a tumultuous battle in many scenarios. The animation is filled with experimental technics, and various innovative approaches that I would argue are directly connected to Anno's close involvement with tokusatsu practices.

The art director for 3D CGI was Hiroyasu Kobayashi (小林, 浩康); he was primarily engaged with conventional drawing utilizing 3DCGI as a supplementary tool in the production process. Kobayashi worked as a matte painter on live-action films before becoming a digital artist and participating in the production of the *Rebuild of Evangelion* series. In a unique piece for CG World vol.276 magazine, Kobayashi says that while Anno was experimenting in the production of the series, and the director became more aware of the digital technology capabilities, his requests to the digital department became complex and varied. Kobayashi says: "The first thing was a

virtual camera for finding camera angles, which Anno felt was a good response to the production of *Shin Godzilla* (2016), and he wanted to be able to use it in the studio in a simplified way." (2021, p.26, my translation[358]). The digital department was using mainly 3ds Max; however, they soon realized that the amount of work and variety necessary to make this animation required getting cooperation from other production companies and developing human resources.

> Mr. Anno, Mr. Tsurumaki (Kazuya), and the other Khara Inc. directors prioritize layout, so animators must have solid screen composition skills. They are also over-detailed in the design, so modelers and designers need to be able to convincingly model elements and details that are not depicted in the drawings. A small studio like Khara can't produce everything in-house, so finding a studio that will cooperate with us is essential. We had been focusing on developing overseas studios. Still, with the digital transformation of video production, we began to find a way to expand our business to other locations in Japan. (By Mr. Kobayashi). (CG World, 2021, p.27, my translation[359])

In a sense, the *Shin Evangelion* provided a challenge and an opportunity regarding technical and artistic development. With that in mind, Project Studio Q[360] was established in Fukuoka in July 2017 by Anno's studio *Khara Inc.* (株式会社カラー) with Dwango Co. (株式会社ドワンゴ) and Aso Juku (麻生塾). It is an animation and CG production studio established to produce films and foster young talent. Hiroyasu Kobayashi currently serves as president and CEO, with Hideaki Anno assuming the position of Creative supervisor. While working on *Shin Evangelion* movie, the studio increased the staff and created a place for artists to implement techniques such as modeling and rigging. The idea also was to develop local talents that could work on various art techniques.

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[358] "筆頭にあがったのは「シン・ゴジラ」(2016)制作時に庵野さんが手応えを感じていたカメラアングルを探すためのヴァーチャルカメラで、それを簡易的にスタジオ内で扱えるようにしたかった."

[359] "庵野さんや鶴巻(和哉)さんをはじめカラーの演出陣はレイアウトを重視した画づくりをするので、アニメーターには確かな画面構成力が求められます。また、過剰なまでのディテー ルや、デザインにもこだわりがあるので、モデラーやデザイナーには図面に描かれていない要素や細部にまで説得力がある造形力が必要です。スタジオ規模の小さいカラーでは全てを内製することは不可能なので協力してもらえるスタジオの開拓も欠かせません。海外スタジオの開拓も力を入れていましたが、映像制作のデジタルトランスフォーメーションもあって、国内の別拠点にも活路を見出すようになりました 。(小林氏)."

[360] Please see further information on the official website, see https://studio-q.co.jp/index_en html#company-info (Accessed 2022.10.01).

For example, *Shin Evangelion* was created primarily utilizing 3ds Max; however, they had to transition to Blender as their main tool. One of the triggers for this change was the battle scene where Eva's No. 2 and No. 8 descend to Infinity. Due to a rendering policy change in the Maya software, they had problems converting the files. They had to purchase additional tools besides requiring assistance from other studios to complete the scene. "However, if we had used the open-source Blender from the beginning, we would have saved time and effort by not having to change tools, and it would have been easier for partner companies to adopt it, so we are preparing to use it in future projects, (By Mr. Kobayashi)." (CG World, 2021, p.48, my translation[361]). Studio Q utilized Blender for modeling and producing the scenes in which the giant Ayanami appears. In summary, Blender is open-source software with multiple applications for creating 3D computer graphics for animation, visual effects, motion graphics, virtual reality, and video games. In 2019, Khara Inc. announced[362] that the company and its affiliated Studio Q would support the Blender Development Fund to develop open-source animation production tools.

Shin Evangelion utilized digital tools and approaches that are not common in animation production. Daisuke Onizuka (鬼塚, 大輔) participated in all four *Evangelion* productions as CGI director. In *Evangelion: 3.0: You Can (Not) Redo*, about 1/3 of the cuts involved CG, and the main work was focused on drawing. However, for *Shin Evangelion*, Onizuka says: "(…) approximately 70 percent (about 1,400 cuts) of the film is CG due to a significant increase in the number of cuts created based on pre-visualizations and 3D layouts." (CG World, 2021, p.27, my translation[363]). In a sense, the last movie utilized 3D CG models on a bigger scale for characters and real-life model objects. The basic rigging for the Eva's followed a humanoid form (ヒト型). Rigging is a technique to use skeletal animation to represent a 3D character while using a series of interconnected digital "bones." In this way, each Eva had its distinct humanoid skeleton that could be repositioned and extended and determined the bending angles. The modeling and design team had to utilize flexibility and adapt to the change in productions since the animation team would further modify and establishes a back-and-forth flow production.

[361] "しかしオープンソースの Blender を使うと最初から決めていれば、ツールをまたぐ手間が省けますし、協力会社にも導入してもらいやすいと考えており、今後のプロ ジェクトでの活用を準備中です。(小林氏)."
[362] The news was posted on the company website for public knowledge, see https://www khara.co.jp/2019/07/30/blender/ (Accessed: 2022.10.05)
[363] "「シン」ではプリヴィズや 3D レイアウトを基に作成したカットが大幅に増えたことによって、全体の約 7 割 (約 1,400 カット)に CG が介在している."

Onizuka also explains the difference in Anno's decision about the process-making of the last *Evangelion* movie: "Mr. Anno requested that we develop a Unity-based VP system so that he could decide on the cut slots by connecting shots taken from multiple angles through editing, just as he does with live-action filming." (CG World, 2021, p.27, my translation[364]). In general terms, Virtual Production is usually used in pre-production and for fixing issues while filming. It also helps visualize complex scenes that can't be filmed. It refers to various digital tools, such as previz, motion capture, virtual and simulation cameras, real-time rendering, and others, that help directors imagine and plan different project elements. While usually animation production is based on storyboards, Anno decided to use Unity-based Virtual Production (VP) in search of various angles. "The system was not used for pre-visualization but rather for angle hunting on animation (performances) that had already been done to a certain extent." (CG World, 2021, p.39, my translation[365]).

This procedure allowed the software to play back the full animation, target loops between frames, and slow fast-moving scenes to hunt for different angles. This approach allowed for a final composition that utilized digital frames as an animation stand for angles and cuts. Reportedly, scenes with five cuts could achieve forty in the last editing. This flexibility allowed for a diversity of camera angles and overall composition effects. One of the leader animators, Ryoichi Nakama (仲眞, 良一), focused on producing the effect animation. In the early stages of production, Nakama developed general-purpose fireball explosions, smoke, muzzle flashes, missiles, and other effects in 3D that could be used throughout the film.

> Nakama's effects were created in the style of *Evangelion: Q*, as well as drawing and live-action, sparks references. For unique cuts, various staff members collaborated in making the effects. For example, General Director Anno personally photographed live-action material with actual sparks created by a grinder and then composed it together to create the cut. (CG World, 2021, p.45, my translation[366])

[364] "庵野さんから実写撮影のように複数のアングルで撮影したものを編集でつなぎながらカット割りを決めていきたいという要望があったため、Unity ベースの VP システムを開発しました."
[365] "ここのシステムは、プリヴィズ用途ではなく、すでにある程度まで出来上がっているアニメーション(演技)に対して、アングルを探るため(=アングルハント)に 用いられた."
[366] "仲眞氏のエフェクトは『エヴァンゲリオン新劇場版:Q』のスタイルに加え、作画や実写の火花を参考に制作。特殊なカットでは、グラインダーで実際に火花を散らした実写素材を庵野総監督が自ら撮影し、それを合成して作成するなど、エフェクト周りは様々なスタッフの連携によって制作されている."

Additionally, CG director Masanori Iwasato (岩里, 昌則) was responsible for creating assets based on the models for production rendering, such as scene colors and mask materials, using tools in-house. Iwasato worked creating masks and adjusting lighting and shadow work. CG director Yusuke Matsui (松井, 祐亮) was responsible for ensuring the overall quality of the 3D CG cuts, working closely with the GD Anno and the other directors to instruct animators on how to perform the tasks. Young CG animators such as Kazumi Yoneyama (米山, 一美), that had worked on the SF animation *Darling in the Franxx* (2018) and Tatsuya Watanabe (渡辺 達也) whose work submitted to the *Animator Draft Meeting*[367] (アニメータードラフト会議) caught the attention of Khara, also worked on the Evangelion project. In Yoneyama's case, his insight into tokusatsu made him a good candidate to explore a tokusatsu-like perspective in animation (see Figure 33).

> He was assigned to this project because of his insight as a big tokusatsu enthusiast. Under the supervision of Katsuro Onoue and Toshio Miike of the Tokusatsu Research Institute (in cooperation with Previz production), he contributed to creating a tokusatsu-like perspective in the layout of the earlier cut and to the creation of the screen using a stroke and horizontals. (CG World, 2021, p.46, my translation[368])

Besides having knowledge of CG animation and digital tools, the artists that also understood tokusatsu texture and elements, such as Yoneyama, were brought to collaborate with the Tokusatsu Research Institute. The lead animator Ryoichi Nakama also expressed in an interview how helpful it was to have an animator with knowledge about tokusatsu aesthetic and history. "Mr. Nakama says: "When Mr. Anno mentioned the title of a tokusatsu movie from the 1960s as a reference example when creating the scene where the Nerv ship and the Wunder collide, Mr. Yoneyama said to me, "I have it" and immediately lent it to me. (laughs)." (CG World, 2021, p.46, my translation[369]). Another animator that had such an understanding of tokusatsu was the

[367] Animator Dratf Meeting of 2022, see: https://www.too.com/atsuc/ (Accessed: 2022.10.05).
[368] "大の特撮マニアとしての見識を買われてのアサインとなった。特撮研究所(プリヴィズ制作協力)の尾上克郎氏や三池敏夫氏監修の下、先のカットのレイアウトで特撮らしいパース付けや、書き割りやホリゾントを使った画面づくりに貢献."
[369] "仲眞氏は「ネルフ艦とヴンダーが衝突するシーン制作の際に、庵野さんが参考例となる60年代の特撮映画のタイトルを挙げたら、米山くんが『持っていますよ』と、すぐに貸してくれて(笑)」と語り(…)."

animator Hiroaki Yabe (矢辺, 洋章), who worked on making effects for the A.T. field of the new Eva 2. Let's briefly analyze Yabe's process in this scene (see Figure 32) to comprehend how to make these visual effects; he utilized a mixture of techniques and tools.

Figure 31 Eva's beast mode technical details[370]

Yabe explained how he utilized aluminum foil photography, light flares from a pinhole, digital composition, and inverting tonal gradations for this scene sequence. "He boldly incorporated live-action materials used in traditional tokusatsu, such as black-painted aluminum foil with small holes drilled with a pin-vise, lit from behind with a flashlight, and photographed using a Vari cross lens filter." (CG World, 2021, p.58, my translation[371]). In frame A, there is a bright orange color texture in the upper left corner, which was achieved by utilizing the method described in aluminum foil photography. In frame B, the cel is composed of digital light and

[370] Image reference from CG World, 2021, p.58.
[371] "黒く塗ったアルミ箔にピンバイスで小さい穴を開け、裏から懐中電灯で照らしたものをバリクロスのレンズフィルターを使って撮影した、昔ながらの特撮で使われた実写素材を大 胆に取り入れている."

combined with lens flare taken in real life with a pinhole. In frame C, the elements are combined, but no visual effects are inserted. In frames D and E, the light on the back carefully changes, and elements are inserted. Finally, on E and F, the pinhole light in the effect cross is also used effectively in other cuts of light and visual effects, producing unique light and texture combinations. This process was also concluded under the creative guidance of Hideaki Anno.

Shin Evangelion takes on the challenge of utilizing digital tools to explore and combine the impact of tokusatsu and animation collaboration inside and outside the frame. The *Hideaki Anno Exhibition* held at The National Art Center in 2021, had three main sections. The first part was dedicated to the works that shaped Anno's life and artistic path. The second part is dedicated to tracing the steps from his amateur years to contemporary works, including *Shin Godzilla* and *Shin Evangelion*. The final session is dedicated to the archive for future generations, including initiatives such as ATAC. It also includes images of his upcoming projects, *Shin Ultraman* (2022) and *Shin Kamen Rider* (expected 2023). The exhibition also included miniature works of the Third Village and the old Nerv building ruins. It became clear by exploring the techniques and production approach of *Evangelion* and the models at the exhibition that Anno incorporated a miniature concept in a continuum between conventional and digital formats.

Figure 32 (left) Miniature model of Third Village[372]

(right) Yoneyama's tokusatsu-like perspective of the first Eva vs. the 13th Eva CG miniature model[373]

[372] Photography taken by the author at the *Hideaki Anno Exhibition* (2021).
[373] Images are taken from CG World, 2021, p.46.

Let's remember that when Butsuda asked Hideaki Anno why he insisted on creating miniatures for anime; his answer was: "Anno: The point is to reproduce them. We called the backgrounds 'sets,' even though they are computer graphics (everyone laughs)." (Butsuda, 2012, p. 23). In figure 33, the left side is the miniature model of the Third Village, which was used to visualize and create the setting. NHK's documentary '*Sayonara Subete no Evangerion ～Anno Hideaki no 1214 nichi*' (さようなら全てのエヴァンゲリオン～庵野秀明の 1214 日, 2021) register some of the making-off of *Shin Evangelion*. In the documentary, Anno walks inside the Third Village miniature set, moving some of the houses and objects to achieve his final vision for the village setting. In figure 34, we see the materials of the storyboard-footage style, where traditional miniature footage (left) and rough CG of the characters (right) are utilized.

Figure 33 Storyboard footage of miniatures and CG[374]

Another scene were reality and fiction are assembled is the last scene of *Shin Evangelion*. The final scene of *Shin Evangelion* is set in the JR Ube-Shinkawa Station (Ube City, Yamaguchi Prefecture), Anno's hometown, which is also the location reference for the movie poster (see Figure 34). The NHK documentary shows the process of making this scene. With a hand camera, Anno runs in the station and stairs to capture the movement, angles, and overall feeling to incorporate in the final scene. For other locations and settings of the movie, Anno took pictures and videos of real places to utilize as a reference. They merged drawings and live footage to produce the scene, and the view from above the station used drone footage. Since then, the real JR

[374] Photography of storyboard materials taken by the author at the *Hideaki Anno Exhibition* (2021).

Ube-Shinkawa Station has become a place for pilgrimage for fans that can visit and compare reality and fictional elements. The scene also drastically combines live-action and animation textures in the frame. The world is rewritten without Eva, and now animated adults Shinji and Mari go out of the station together into the real-world footage scenario.

Figure 34 Shin Evangelion final shot in the JR Ube-Shinkawa Station[375]

There are different ways to visualize this scene's importance. However, considering Anno's trajectory in making animation and tokusatsu, in the end, these mediums collide. Animated characters break away into the real landscape footage of the city that is utilized in a miniature manner. The real and fictional barrier is utterly shattered, showing that Shin Evangelion is a profound reflection of Anno's artistic practices in both fields, from the animation production endeavors to its execution. It's the director's visual essay on effect-making pathways inside and

[375] Photography of the final scene panel taken by the author at the *Hideaki Anno Exhibition* (2021).

outside the frame. Although the final result is an animation, he does not abandon a tokusatsu practice within its making, nor is he concerned with adopting digital tools as an additional procedure.

This procedure is also counter-genre, with visual animation practices entering tokusatsu-making as an internal force. It was already present in *Shin Gojira* (2016), and it's taken to new levels in Shinji Higuchi's *Shin Ultraman* (2022), where Anno is the writer and producer. Although this thesis won't cover a range of contemporary procedures in detail, since it deserves careful analysis, I want to point out the importance of looking at the techno-social assemble these artists are enabling in their practices. Specifically, for the making of *Ultraman* Specium-ray beans effects, in *Shin Ultraman,* Iizuka Sadao was brought to collaborate in creating the digital conception based on its original version. In my interview with curator Kan Miyoshi, he showed me the framed drawings Iizuka made for *Shin Ultraman*, which are now in the ATAC facility. I also remember seeing Iizuka Sadao's name in the credits of *Shin Ultraman's* movie when I watched it in the theater.

The series of *Shin* (new) movies (*Shin Godzilla*, *Shin Ultraman*, *Shin Kamen Rider*) can be seen as a reintroduction to a new public. Still, they are also an ode to the original creators and its inspirations while implementing something new. On the official website of *Shin Ultraman* (2022), Hideaki Anno explained that his motivation for writing and producing came from the Tohl Narita oil painting called *Incarnation of Truth, Justice, and Beauty*[376] (真実と正義と美の化身, *Shinjitsu to Seigi to Bi no keshin*, 1983).

> The design concept for this work originated from the desire I felt when I saw Tohl Narita's *Incarnation of Truth, Justice, and Beauty* and wondered if I could somehow capture this beauty on film. When we depict the epochal work of *Ultraman* once again in the modern age, how should we depict *Ultraman* himself? The answer to this question was obvious. It is to depict the original image that Mr. Toru Narita aimed for. We aim to reproduce the taste Mr. Narita wanted, which can only be shown with today's computer graphics. (Shin Ultraman, 2019, para.1, my translation[377])

[376] Tohl Narita. '*Shinjitsu to Seigi to Bi no keshin'* ('真実と正義と美の化身), 1983, oil on canvas, 91.0x60.05cm. See the oil painting on Tohl Narita official website, see https://tohlnarita.com/gallery/ (Accessed: 2022.10.09).
[377] "成田亨氏の描いた『真実と正義と美の化身』を観た瞬間に感じた「この美しさを何とか映像に出来ないか」という想いが、今作のデザインコンセプトの原点でした。我々が「ウルトラマン」というエポックな作品を今一度現代で

Tohl Narita was the Executive Art Director at Tsuburaya Productions and worked on variations of *Ultraman* from *Ultra Q* to *Ultra Seven*. There, Narita worked on the character design of heroes, and monsters, ranging from painting, sculpting, and mechanisms construction. In the eighties, he would participate in painting exhibitions in different galleries. Narita's paintings were published in different books, and he spent his life making paintings and sculptures as a visual artist until his passing in 2002. Anno also visited Narita's family members before starting to write the *Shin Ultraman* project. I'm reminded of Kan Miyoshi's words, as how the artists that entered in this process of preserving animation and tokusatsu materials saw the legacy of their predecessors with a sense of gratitude.

I've come to understand that these last ten years of preservation and research efforts are not only led at the institutional level of museums and exhibitions. These efforts of preservation and gratitude are embedded and have shaped the film productions mentioned. A techne or art-making, as I have defined in this research, is socially developed, and inscribed. It is also transmitted, adapted, and it bounds new social relationships. In this manner, the artists legacies are not constricted to their historical time; they are carried by the people that have come after, by the images produced after. That is the gift that creates new pathways of image-making.

描く際に、ウルトラマン自身の姿をどう描くのか。その問題の答えは、自ずと決まっていました。それは、成田亨氏の目指した本来の姿を描く。現在の CG でしか描けない、成田氏が望んでいたテイストの再現を目指す事です." Available at: https://shin-ultraman.jp/about/ (Accessed 2020.10.06).

7.0. Conclusion: Towards new ways of conceiving Japanese Media

After doing documental research, fieldwork, interviews, and looking at the new initiatives coming from artists, producers, collaborators, and the industry, it became clear that there is a need to reassess and communicate different understandings of Japanese popular media. There is a demand to construct or give space for other discourses around media materiality and representation that accounts for artists practices in their technical and anthropological spheres. Perhaps the image of Japanese popular culture has become *too naturalized.* Because it is a given, its intricate details, hardships, and the social connections that it enacts are often assumed in certain spheres. For example, in the interviews, I noticed the assumption that because something is famous or seems to be everywhere, the main public thinks *it probably gets to be preserved*. People think the artworks mentioned are bound to be archived because of digital technology, the internet, etc. In tracking tokusatsu and animation movements, I realized that artworks are saved from being destroyed by other artists, fans, and researchers more than imagined.

However, in a chain of events crossing generations, artworks are living artifacts of a time where certain materials, technology, and social and economic settings were *there*. It's a living witness of history and all the sedimentations it carries from the people and the environment that have settled on its surface. It gives clues in its material choices, techniques, social relations between artists, iconographic styles, and how it was distributed, but it's never a complete image. There is always space for a different gaze. While I followed this research subject treads, it led me on an unexpected journey. One of the first challenges I observed was that comprehending the procedural connections between tokusatsu and animation required an analysis of image materiality and its inner mechanisms crossing the fields. Not only that, but how similar procedures were created, and combined in different manners, paying attention to composition features. I felt it necessary to take apart some of this history and assemble it in a layered comparison. The questions that guided me were: Regarding materiality, what inside of tokusatsu and animation was mutually shared and opposite? Which artists worked in each or both fields? What inspirations did they carry to and with them?

Although this research is organized in a steady historical line of chapters, there is a play between the main time frame discussed and its intersectionality, so in this way, there is a little

about animation in tokusatsu-focused chapters; and a little about tokusatsu in animation-focused chapters. This method allowed me to draw material and aesthetic connections closer, approximate the artists that collaborated, and ultimately enable the reader to make new ones. In a sense, I conducted this research by excavating artifacts, interviews, and people's stories to form a new image—an image about *media collisions*. Although media analysis can often focus on finished artworks as closed objects, my aim is to open them to unearth the technical, artistic, and labor challenges in their production process. Negotiations are made in the material and immaterial procedures, and ultimately, collisions arise. Because images are a place of encounter, following Deleuze's machine concept, where the material, cognitive, affective, and social domains are infused, they ultimately collide, leaving traces. Each collision has distinctive forms and time fractures that survive in unique ways.

Media collisions require careful attention to how collective efforts through generations utilize what is available around them to produce art and meaning. Although it is tempting to separate analog and digital formats to tell media stories pragmatically, these categories ultimately lack to account for the techno-social multiplicity that bounds art-making. Instead of pre-establishing divisions, as Jonathan Sterne says, if analog is understood "(…) as a dimension of life, we can also restore its descriptive and analytical power, all the while also forcing ourselves to develop richer and more varied histories and theories of digital media." (Sterne, 2016, p.42). Indeed, a dimension of life, or as Warburg said, a *life in motion*.

Images are a place for encounters, collisions, and sedimentations, and in this sense, they should be approached as a multiplicity that moves through time and space. The prologue of this research counted with an interview excerpt from Professor Hikawa about his views on the intricate elements of image-making in Animation and Tokusatsu. His question was: "But why everyone seems to forget it? Some people think of it as a topping, like *sprinkles*, and I think, no, *that's the main dish*." Image-making procedures are the foundation of what gives these artworks life. They are the sedimented clues of how artists negotiate materiality and immateriality in their practice. It is through the processual dimensions inside and outside the frame, in the gray matter of their connections, that new stories can be found. To stand before the image as an immersive praxis is ultimately remembering and investigating the elements that rapidly enter the senses. It is to question the image and investigate its ecological formation and its multiple survivals.

In a sense, the mechanisms of image-making and the visual effects it produces are what give weight and liveliness to a moving image. If you were to remove the effect animation or the tokusatsu effects, the result would be a dreary image—the liveliness aspect of moving images and the feeling of going to another world is achieved by giving material weight and realism to unreal or natural objects. In a sense, what causes *pathos* or emotion, can be taken for granted since its procedure function might not be so obvious. Image-making has also to consider the coordination between elements and the overall effect it will have on the screen. Although this research does not cover other elements that give weight to moving images, such as music background, voice actors, and others, they contribute to the overall representation consistency of visual images. Hikawa points out that when it comes to moving images, often visual effects are understood as sprinkles on top of an image, but they are the foundation.

The effect maker of tokusatsu and the effect animator in animation are both dedicated to recreating reality with the twist of giving an emotional charge to represented elements while movement takes place. There are differences in the procedure, but because they shared common space of creation, they've come to engage with collaboration and differentiation practices. This unveiled story is one of the building blocks of Japanese media. DIY practices started by necessity, and due to economic constraints, artists gave emphasis to the result on the screen. Some recognizable visual elements that differentiated the animation style and tokusatsu – such as limited animation and pose-cut followed by explosions – relied heavily on conveying emotion over following established overseas technical procedures, for which they did not have the materials.

In a sense, it was necessary to create techniques that accounted for their material and aesthetic context. What was born out of necessity created a long list of artists that passed down their knowledge of art-making and inspired new generations to create their own way of approaching the field. The seed of *doing it yourself* has remained part of Japanese art practice in these fields, even when the materials available have expanded as the country has achieved a more stable economic condition. The structural manner in which media was born in Japan has close ties to using terms such as *Anime* and *Tokusatsu* because they are closer, culturally, and linguistically, to the artists and viewers embedded in the Japanese context. In a sense, it also marks the particularities of media materiality of these mediums and how they have been charged and recognized over time. Although the relationship between animation and tokusatsu has been known in particular circles of artists, fans, and industry related-people, it has remained somewhat obscure

in the research field. Because it has not received careful attention, larger discussions are yet to be made and spread to larger audiences. That is why initiatives like *ATAC*, *Sukagawa Tokusatsu Archive Center*, and others mentioned in this research came to exist and are of vital importance in such a task. These initiatives are part of a large movement to increase awareness of preservation, restoration, archiving, research, exhibition-making, and education practices at large. Personally, one of the most cherished aspects of this research was the meetings and exchanges I had with people involved in these practices.

The anthropological-based investigation gave me an insight into what artists and collaborators were aiming for in their initiatives. I wanted to meet the people engaged in such efforts and comprehend their stories and perspectives. I understood that although Japanese media is known for its industry, it survives and thrives because artists keep pushing forward and stepping on roles of researchers, and public speakers, talking with the government, and so on. I wanted to bring the voices of people engaging in these activities to the academic community. By documenting and reassessing the technical and aesthetic procedures on these mediums, I was also engaging with the accumulation of such practices and generational legacy. I see this research as an image archive approach to understanding these procedures and how generational legacy can be linear and non-linear in their exchanges.

For example, around 2009, at a dinner party among artists celebrating the end of filming *Evangelion: 2.0 You Can (Not) Advance* (2009), Tomoo Haraguchi that had been restoring miniatures, brought a rocket miniature with him from *Ambassador Magma* (マグマ大使, 1966, P. Productions), creating a conversation that led to more concrete actions. That meeting sparked ten years of efforts in researching, mapping, making exhibitions, creating facilities, and creating conversations with the larger public. To understand events, the backstories are as important as the events themselves, although these stories are often difficult to access. It is in the social interactions that events unfold and transform, such as the example where Hideaki Anno was invited to direct *Shin Gojira* (2016) because the *Tokusatsu Museum* exhibition caught the attention of Toho. The decision to make an exhibition and to find a place to archive those materials created a wave of actions that increased attention to animation and the tokusatsu relationship in Japan. However, these last ten years of movement towards preservation and awareness are still young and need further collaborative bridges.

The first aim of this research was to bring awareness and invite further research and discussions about animation and tokusatsu techno-social connections. A secondary aim was to create theoretical inquiries about Japanese media in a plural manner, accessing academic theories but also artists practice and research. I believe that further academic and artist collaborations for research initiatives are indispensable for achieving new understandings of media theory, practice, and preservation. On a larger scale, this research aims to promote and contribute to bringing Japanese popular culture to a wider discussion about artistic techniques and style establishments.

During this research, it became clear that I was excavating *media collisions* since the methodology was dedicated to unearthing each medium in its techno-social intersectionality. The in-between space is where collisions happen, where the shock of artistic styles in a technical shared space can create different methods of image-making. Historically, Animation and tokusatsu had common uses of masks, in which tracing/drawing and animation techniques were incorporated into both fields. The technical shared space has expanded and allowed references from inside and outside the frame to be recomposed. Tokusatsu miniatures sets, and props have created a realm of intersection between reality and fiction, where monsters and miniaturized versions of cities become pilgrimage places for fans. This scenario influenced animation, where the background settings became increasingly detailed and identifiable. An increased number of fans visit the real location reference for animations.

The impact of tokusatsu and animation collaborations is inside and outside the frame. Inside in the technical and collaborative practices where references from both genres are utilized, and outside in the way artists collaborate and create new possibilities. The inside and outside of the frame are in a continuum, and it's possible to see and apprehend some of its configurations. Although it is early to make definitive conclusions, I believe that the recent practices of research and collaboration led by artists in these last ten years will profoundly impact art-making in tokusatsu and animation in the coming decade. The pathways of collaboration for preservation also have created a movement toward artists formation and education in various traditional and digital tools.

While activities promoting traditional tokusatsu techniques are being promoted to educate the younger generation, there is a concern about increasing the number of artists that can utilize the digital medium and tools while understanding Japanese aesthetic influences based on DIY tokusatsu-animation practices. I observe a tendency to utilize real-life materials, textures, and

experiences to ground digital tools and produce something new. In this manner, digital tools can provide an opening for a composition style where references obtained from reality-based shooting and visual effects can become a *play*. When I interviewed Yoshie Kawahara, she told me about her views on how artists create from their living experiences, and I returned to the idea of *life in motion*.

> Projection is the only thing humans can do, to put it another way. You can't create the unknown. You can't make what you don't really know. No matter how you do it, all the aliens become little gray guys because people have never seen aliens. Some say it's actually because of *Ultraman*. Until then, all aliens were octopus-like and jellyfish-like. That also came from Wells's *Space Wars* novels. So, in the end, I could only express myself with what I was given. That realness that I think "this is real" is real because *I know it*. That's what visual expression is all about. (Kawahara)

Following Kawahara's thought, it becomes clear that no matter the variety of techniques available, there is a need for artists to bring life, its *pathos,* to the enmeshment of art creation. That is because techniques and social experience are interconnected, and their collision with humans produces visual expressions. Initiatives of art preservation coming from artists, in this sense, also point to a need to create a transmission platform for newer generations about stylistic practices that have survived and sedimented Japanese media. When I asked Kawahara what she thought about the new possibilities of digital creation, it partially confirmed a sense of wonder that I had within this research.

> Even if I'm creating a bear, it is the human who sees, and it is the human who creates. In the end, I am creating a human being in the form of a bear. It is the same with novels and everything else. It is the human who shows to us. If I'm making something to be shown to people, I need to understand the history and culture of the people I'm going to show it to. That's what it comes down to. Then, based on the historical culture, whether it's animation, live action, or whatever media we can use today *if artists understand the why of things, they will know how to do it*. If the feeling is that the old animation and tokusatsu can be more relevant to the new era, it is because it has something that appeals to people's hearts. Because they have seen it, they have experienced it. (Kawahara)

I wondered about the need that made artists create bridges of art, research, and preservation within digital practices and, what they were trying to convey, what legacy they wanted to create. Kawahara's words resonated with what I was looking for, *the why of things*. Techne as social, cultural, and anthropological embeddedness in art practices. The transmission of the know-how of experiencing past and contemporary media practices to achieve new landmarks. Indeed, the production process in which references from multiple sources are utilized does not follow media boundaries; they collide with them to produce and investigate new stylistic settings. In contemporary media, digital software for computer graphics allows for increased pre-production-based films.

Furthermore, open-source technology will allow pathways of collaboration and a way to adapt certain features to the aesthetic needs that a group of individuals or companies are trying to achieve in their films. However, creating individuality of aesthetic styles in the maze of digital tools needs a careful understating of stylistic history. In that way, it challenges artists to expand their range of capabilities. It's also where new pathways of collaboration can arise, where artists references from tokusatsu or animation can influence the choices of how camera angles, layout, and the overall emotion provoked should lie. Ultimately, conducting this research allowed me to understand that to move towards new ways of conceiving Japanese Media, we must look at images as *a place of encounter*. A place where the anthropological, technical, and political aspects of artistic legacy collide, where different meanings await.

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