

# *Anime “Obsession” and Importance of Environment in Its Formation*

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**Abstract:** As a novel, developing form of art, anime has a large fan base, 33% of Japanese watch anime in a regular basis, and 27% Americans of age 18-29 find anime “very favorable”. Due to capability of releasing dopamine, people could certainly be addicted to anime. However, there is currently a mixed approach towards the effects watching anime. The paper would propose that the difference displayed between being an addictive viewer, which would further cause a combination of mental illnesses, and being a person who benefits from anime watching can be explained by a difference in transportation, which is determined by the social context they reside in. However, the passage would also explore how environmental impact of anime addiction differ from that of substance addiction. The paper finds that past experience learnt from environment that does not involve in drug intake only influences tendency and amount of drug intake, while not being able to determine the biochemical value of drugs, however, those experience would be able to effectively impact the amount of reward from watching anime. Finally, the passage explains how a reciprocal determinism model, annotated with social contingencies suited to modern Japan society, would potentially explain how a spiral of indulging into an addiction of anime would eventually be formed.

**Keywords:** anime obsession, anime, environmental impact

## 1. Introduction

### 1.1. Validation and characterization of anime addiction

Anime addiction should be considered a type of addiction and should be distinguished from habits. Traditionally, people understand addiction as substance use disorders. For instance, the Diagnostic and Statistical Manual of Mental Disorders (DSM)-V classifies behavioral driven addiction, such as gambling, as a substance use disorder [1], and ICD-10 also classifies both substance and behavioral addiction as “due to psychoactive substance use” [2]. Recently, behavioral scientists pointed out the possibility that “any entity capable of stimulating the reward center of a person can be addictive” [3] and people can “be addicted to a particular set of experiences” [4]. In other words, people may be addicted to fictional narratives in addition to physical substance such as tobacco, alcohol, and drugs. For instance, storytelling, which was already proven to be a “powerful force” molding “knowledge, beliefs, and motivations” [5]. Similarly, elevated release of dopamine is also found following a desirable outcome of anime characters [5,6]. However, compared to stories, Anime is a type of fictional narrative that stimulates multiple sensory modalities as well as one’s emotions. Thus, anime

viewing is sufficient to provide an incentive, which may promote the development of behavioral addiction in some viewers. Additionally, high consumers of anime also suffer from similar adversities compared with people with other behavioral addictions such as internet addiction. For instance, Chebbi [7] demonstrated that negative physiological and psychological outcomes like tiredness, depression, and loneliness were commonly observed in the group of people suffering from behavioral addictions. Moreover, different types of behavioural addictions and other mental health illnesses may be correlated and co-occur. Alavi et al. [8] advocated this idea by suggesting that behavioral addictions are a “collection of disorders”, including depression, anxiety, isolationism and so on. Similar to anime fans, long-term watching, until a “subcultural identity related to anime” was formed, which is in turn associated with statistically significant increments in suicidal tendency, depression, anxiety and aggression [9]. Hence, anime can potentially be addictive and anime addiction may incur negative health consequences. Actively claiming an identity relating to anime (which indicates long-term indulgence in a fictional world) is a key phenomenon that may characterize behavioral addiction to anime.

Currently, there lacks universally accepted definition for diagnosing such type of novel addiction. To acceptable way to characterize the disease, is referring to key symptoms of similar behavioral addiction that has been recognized, such as internet addiction disorder (IAD) [10] and modulate it to describe the addictive medium of anime: “1. Excessive watching (spending a high proportion of available time watching anime daily) 2.Social withdrawal associated with anime watching 3. continuing to spend the majority of time watching anime despite negative effects on physical or mental health.

## **1.2. Significance of the research**

The consumption of anime (short for Japanese animation) sees rapid increment amongst younger generations worldwide. This upward trend is supported by self-report findings: In anime’s country of origin, 90% of young Japanese and 33% of the general population claim that they watch anime on a regular basis [11]. In other countries where anime is popular, for example, America, 27% of the population from 18-29 are very favorable of anime, and another 17% is somewhat favorable [12]. The popularity of anime indicates that a wide scope of influence around the globe. Thus, delineating potential pathways leading to anime addiction may contribute to potential development of more efficient form of treatment to anime addiction.

## **2. Main body**

### **2.1. Reviews on debates for outcome of anime viewing and proposing novel interpretation for the cause of outcome**

Whether an increase in anime consumption would result in improved mental health of viewers is widely debated. Studies utilizing different methodologies also provided evidence for the impacts of anime on socializing [13,14]. Other studies supported the idea that anime facilitates development of key sociocognitive abilities of adolescent viewers, such as empathy [15], flexibility in face of challenges and team awareness [16]. However, abundant research evidence supports the counter-argument that: anime consumption may cause addiction to certain attributes of anime (for instance physiological style/outlook of anime characters or ideology conveyed by the anime). Viewers who are obsessed with anime and immersed in the anime world may show a further increment in anime consumption. When this need is not fulfilled, viewers may experience negative emotions, which may predispose a range of internalizing and/or externalizing mental illnesses. For instance, a Russian teen hopelessly committed suicide after seeing his favorite anime character die in 2012. His father reported that his self-inflicted harm was because of “not knowing what was reality and what was fiction

anymore”, due to “too much time watching TV” [17]. Similar incidents sadly occurred in India and Japan more recently [18]. Furthermore, not only is excessive watching associated with suicidal risks, researchers investigating subcultural identity reported a positive correlation between anime consumption, the formation of subcultural identity, and increased mental health problems anxiety, aggression and depressive symptoms levels. The results are highly accurate, with highest accuracy being around 71% [9]. Indulgence into the anime world may also negatively impact viewers’ social life and academic performance. For example, students to be “feeling lazy to do any activity” for design students [19]. In Japan, Hikikomori, severe social withdrawal, occurs more frequently among anime fans. In overview, for some, there is an improvement in mental health of adolescent following the developing of anime watching habits, while others may be. However, the majority of research focuses on the effects of anime consumption, there lacks studies that investigates the individual differences in consequences of anime viewing between different viewers. Although the superficial reason may be concluded as “an increment of anime viewing time to a pathological level”, or in other words, addictive viewing. People, like the dad of the Russian boy mentioned, or even the Russian administration afterwards, consider the adverse consequences of anime watching to be a result of “an increment of anime viewing time to a pathological level”, attributing the blame completely to the “addictive nature” of anime content. This article would argue against this statement, by proposing that there could be additional factors which play a distinct and crucial role in activating the rewarding circuit while consuming anime, namely, personal experience and social issues. In other words, personal and social factors are important in explaining the heterogeneous consequences of anime watching. Furthermore, the involvement of such factors in anime addiction discriminates it against substance addictions, where the actual substance takes a more pivotal position. Because of the variability of plots and designs in the anime medium, a high proportion of pleasant experience obtained during anime viewing may be associated with empathetic responses towards a plot, which in other words is a process of “transportation” which is “when we see our experience in the character, and our hope, desires and dreams in the plot” [5]. Thus, the passage propose that the likelihood of an individual being an anime addict is influenced by their past experiences and the wider social context they reside in. The present paper would discuss evidence that certain combination of social environment the person lives with would entail higher risk of anime addiction (indicated by high consumption and dependence on anime), which is itself a mental health issue and may be further linked to other mental health problems.

## **2.2. Discussing role of environmental factor in various types of addiction**

### **2.2.1. role of environment in various substance addiction**

In most substance addictions, while abundant evidence indicates social factors and individual experience that does NOT directly involve in consuming the substance may determine: 1. The possibility of a person taking the substance, and 2: quantity of intake. But less evidence suggests these factors significantly change the amount of dopamine release for a fixed dose of certain substance/action. For instance, past research suggests that stress of various forms is “involved in escalating alcohol and drug use during the transition from episodic drug exposure to the addicted state.” And “during the acquisition phase of self-administration” [20] Social influence of “an increase in proximity and density of alcohol outlets” would ultimately cause easier access and result in “alcohol consumption among teenagers, college students, and adults” [21]. Similar association could also be discovered with other addictive substances such as tobacco. Moreover, high exposure to advertisements of alcohol and cigarettes has been demonstrated to be a strong predictor of future drinking/ smoking behavior [22, 23]. However, there is limited evidence that similar experience/environment above, which is not directly related to ingestion would largely influence the

extent to which a rewarding circuit is activated acquired through smoking/drinking a given unit of tobacco/alcohol. Empirical data from experiments on learning models can also test such hypothesis. For example, Smith [24] concluded that in the reciprocal determinism model, environmental impact, as a form of the “multiple external determinants.”, would increase or decrease the possibility of drug use. Overall, one conclusion that could be made is the role of experience effectively alters the tendency of intake but doesn’t directly change the biochemical value of drugs. the Rescorla-Wagner Model can be applied to predict the curve demonstrated by the results for acquisition phase of classical conditioning as converging towards a certain asymptote [25]. One of the key features of the model is that, for a fixed unconditioned stimulus such as food, rodents would show a uniform  $\lambda$  – (defined as “maximum associative strength that unconditioned stimulus can support”), indicating that given that the US remains consistent, the maximum arousal elicited by stimulating the rewarding center of brain is largely constant. Other proof would include [26], where increasing dopamine level indirectly by giving more food incentive and directly through injection to the brain would change the value of  $\lambda$  in the equation. This suggests how dopamine affects  $\lambda$  and how in a typical acquisition experiment, empirical data suggests the maximum level of dopamine generated by a fixed unconditioned stimulus remains largely unchanged. Overall, evidence above suggest the possibility that the role of experience effectively alters the tendency of intake but doesn’t directly change the biochemical value of drugs.

### **2.2.2. Role of environment/ past experience in anime addictions**

Rewarding experience of viewing narratives, compared with other forms of addiction, requires comprehension of plot and utilizing of a more active cognition form. Previous research findings suggested that substances such as drugs, which may be circulated in the body through bloodstream, are more addictive. For example, a meta-analysis of 44 studies indicates that trying one cigarette would entail a 66% chance of developing daily smoking habits, at least temporarily, in later stage of life [27]. In comparison, the influences of fictions are less general, as they are hardly sufficient to stimulate the interest of the general population. viewers’ attitudes may range from “willing to invest so much in (such) activity” to “psychologically uninteresting” [28]. The study suggested an answer that “personal subjective experience of the film”, in other words, a personal measure of how emotionally aroused and how rewarding the experience was were found to be strongly predicted by the extent to which “transportation” occurred within each individual. The degree of transportation was demonstrated to be significantly positively correlated with: 1) more intense change in emotions; 2) identification with main characters; 3) increased tendency to attribute misfortune to external causes (e.g. towards other individuals) and empathize with the character, for instance, they may think that the characters had done all they could”; 4) IOS scores, indicating a boundedness (connection) to other audiences and a sense of belonging within a subcultural society; 5) increased pain thresholds indicated by endorphin level. Results above led the authors to conclude that “transportation” is “placed at the center of audience experience”.

One of the critical determinants of whether “transportation” would occur, by its definition is whether we: “see our experience in the character, and our hope, desires and dreams in the plot” [5]. For instance, members of fraternities or sororities showed a larger amount of transportation towards a story set at fraternities [29]. In addition, stories that have “mental fluency and ease of processing” would lead to better transportation [30] (e.g. people who have hardship socializing with others would be more transported by an anime that portrays difficulties in socializing with characters who are more introverted and emotionally detached from others.) Researchers also suggested how features of a narrative, such as plot unharmed by logical errors (loss in realism) [31] and individual factors such as “transportability” would influence the degree of transportation effect [32]. However, this does not mean that one should underestimate the important role of nurture, in other words, people’s past experience (influences of school and family), in the occurrence of transportation towards a certain

narrative. Research suggests that the seemingly nature-based factor: “transportability”, is modest-to-medium correlated with empathy [28], (p less than .001). Experts claim that: “most will learn empathy through observing interactions around them” [33], and concurrent study suggested that genetic factors only explain about 10% of the variance in empathy [34]. Although some researches disagree with such idea, the chosen experiment has a large sample size of 46,000 and novel reliable methodology of analyzing genetic data. This indicates the chosen experiment has a higher degree of generalizability and validity and would be more representative. Thus, what one could conclude by analogy that past experience, as a crucial figure in determining the degree of “transportation” for narratives, would also be a key determinant of a subjective audience experience while viewing anime, as well as the degree of identification of the group of people doing similar things (I.e. a subcultural identity relating to anime). Although previous empirical evidence does not explore transportation under the form of anime, ([28]-film clips; [30,31]- books), such analogy could be made for anime regardless of the potential doubt of “preference of medium where the story is written” because empirical evidence ensued that people would be transported into a variety of media (even for the most concurrent form of media: virtual reality) and no consistent advantage for any form was indicated, which “impl (ies) that the actual content is more important element” [31].

Some may argue that a strong transportation may not necessarily predict the development of anime addiction, since there could definitely be situations where being presented the same plot, (for example, a plot describing a fantastically ideal scene), some people would be more motivated to devote themselves in a positive behavioral change following transportation. For instance, Green, professor studying the power of narratives, suggested that: “people are more likely to change their lifestyles when they see a character, they identify with making the same change”. [35] While other may be pathetically thinking that realistic world may never operate in such way. However, it is worth pointing out that: people do not only passively perceive the information of media, but are ‘active-meaning maker’ that interpret the information of media in their own way, “based on personal knowledge and experiences” [36]. Thus, not only would “transportation” be influenced by personal experience, the attitude/ effect (which could potentially be indulgence) elicited by the “transportation” would also be determined by past experience.

### **2.2.3. Predicting the process of development of anime addiction**

The Last paragraph would explain a potential pathway of how the spiral of addiction develops utilizing a reciprocal determinism model. Although it has only been used to explain substance addiction, it’s worth mentioning that despite the critical role environment plays on directly impacting degree of reward for watching anime, it also impacts the tendency of repeating an action through social learning processes. According to the model, the non-eliminable dimensions of addiction [24], suited to a medium of anime, are: 1. Anime viewing, 2. personal characteristics of the user, (such as empathy, transportability past experience relating to the plot) and 3. contingencies operating in social environment.

Previous paragraphs have explored how personal characteristics, determined by environment, are critical in forming reward for a singular view. This paragraph would then illustrate how potentially contingencies of social environment would lead to repetition and increased amount of viewing, taking Japan as a typical example. Initially, people might be just be recommended to watch anime by friends or environment, (the vast advertising campaign of anime, and a broad population base that watches anime), where the temporary benefit of viewing is larger than temporary cost, due to a lack of obvious disadvantage. Arguably, Japanese people, with experience of collectivism (lack expression of personal ideas) [37-39], nihilism [40] and massive stress [41,10] would be easily transported to plot of anime, as Interestingly, the corresponding subgenera of anime, 1) romance&friendship, where people treat others true heartedly, 2) self-improvement&overcoming challenges, where characters



decides to challenge an unaccomplishable task, and 3) comedies, where jokes bring temporary levitation to stress, make up the most of the most viewed anime. It's also common to see more than one aspect in one series of anime. Accompanied with the cliffhangers at the end of each episode, people are highly likely to binge watch, leading to a ease in identifying with the anime subcultural group [28]. However, in interacting with a wider population, this process of identification would also lead to lower social reputation and less social support for individuals [9] (e.g. alienation, bullying). Moreover, people obsessed with fiction would also cultivate unrealistic expectation for others [42], further bringing disappointments for socializing with others. While the escapism and infantilism ideology conveyed by anime [43], suggesting an easier, comfortable life, would progressively increase the evaluation of behavioral outcomes relative to motivational aspects of watching anime, the negative contingency during socializing with others, reduces motivation for participating in social activities, and eventually a spiral of repetition unfolds.

### 3. Conclusion

Overall, the passage explains how anime obsession could be possible and could definitely be distinguished from being a hobby. Then, by examining the possible positive and negative outcomes of watching anime from previous studies the paper suggests the possibility of a difference in role played by experience in substance addictions and anime addiction. The following paragraphs states how the role of environment in substance addiction involves in determining the tendency and amount of substance intake, while providing less evidence for directly effecting the biochemical value of drugs. Then the passage examines how the biochemical value of anime watching is mediated by a cognitive factor of the amount of transportation which is determined by whether there is presence of a similar experience in the anime. The passage then explains some of the potential doubts, including how empathy, as a potential factor determining transportation, is in fact largely nurture dependent; and how not only the amplitude but the ultimate meaning interpreted/ effect due to a high level of transportation is caused by past experience. Finally, the passage then discusses a possible explanation for how a downwards spiral of developing addiction Based on a reciprocal determinism model.

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