



**“The Intimate Relationship Between Human-Like Creations and  
their Human Creators”**

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## The Intimate Relationship Between Human-Like Creations and their Human Creators

### **Introduction**

The Uncanny Valley: a concept presented to us long ago by the scholar Mori, whose work was finally translated and prodded recently. Mori presented us with this notion in order to explain a complex phenomenon we all experience when we are introduced with creations that have some form of animism to them. We automatically and effectively assign values to certain features and aspects of certain objects and animated beings. Regardless of what we're viewing, we as human beings seem to have some sort of clue on how to establish an acceptable norm in terms of whether something is real, or something is fake. Burleigh surmised that "when stimuli are defined by a near-perfect resemblance to humans they cause people to experience greater negative affect relative to when they have perfect human likeness (HL) or little to no HL" (Burleigh, Tyler J., et al.). For instance, take realistic-looking dolls and their uncanny resemblance to humans. We are not all at ease taking sight of them, as we feel an eerie resemblance to fellow human beings, while there is still something noticeably off. A multitude of horror movies throughout cultures have exploited this creepy resemblance and confusion in people. In an excerpt from one of Freud's works "The Uncanny" (also mentioned in Kriss Ravietto-Biagoli's book, *Digital Uncanny*) Freud discussed this feeling of creepiness in humans as a "ghostly presence", and that every "affect belonging to an emotional impulse, whatever its kind, is transformed, if it is repressed, into

anxiety” (Freud). No matter the situation, if we have little knowledge of the “what”, “where”, “why”, etc, we internalize the situation and amplify its uncertainty in unnerving feelings of nervousness. Regardless, this is extraordinary in today’s modern society as we head into a multitude of technological advancements such as Facebook’s AI and Google’s personal assistant, as well as societal feats in which we expand our beliefs and knowledge about the world unlike any other in the past. If we can come to understand these “ghostly presences” emanating from artificially intelligent products, we could overcome them through extensive research and tolerance.

Human advancements in technology, in artificial intelligence, and through modern evolution of man, we have grown used to certain values in life that have contributed to our survival and our success. As a result, we are not likely to throw out what we hold true to ourselves so lightly, even if it means advancing further in some technological areas. We are only human, and we do not always trust easily. Through our own means of the scientific method, we deduce what is and isn’t a threat based off first impressions to formulate our responses as appropriately as we see fit. With that said, how do human beings approach the concept of non-human creations gaining more intelligence and sentience, without feeling threatened by their uncanny resemblance to unnatural threats? I will be exploring the human mind and its powerful psychological adaptations, the advancement of realism in artificial intelligence, trusting potentially problematic artificial intelligence, as well as trusting other human beings in creating artificial intelligence to delve deeper into my research question. In the cases provided by Google Home/AdSense, Facebook Beacon, and Facebook’s friend suggestion algorithm, we question how we can trust something that knows more about us, than we know about it. The theories providing the foundation of my research consist of the psychological theory with a focus on abnormal psychology, Mori’s “The Uncanny Valley” theory, and Sigmund Freud’s theory of the uncanny. Through getting inside the

complex mind, one can see how humans decide what is creepy and what is cuddly, what is safe and what is dangerous, as well as what is trustworthy and what is untrustworthy. It is by human nature to remain defensive and apprehensive about the unknown, just as much as it is human nature to identify and adapt to change pertaining to said unknown.

### **The Problem of the Uncanny**

A robot only knows as much about being human-like based on the data it was given about humans. It cannot deduce natural human features by itself no matter how advanced the technology becomes, as it is not human to begin with. For the robot/non-human creation to be accepted and tolerated, it must first overcome a human's fear of the abnormal. It is necessary to understand what makes a creation cause negative arousal in human beings in order to allow it to thrive in the human world without trivial matters slowing progress down. Burleigh's work with his coworkers based on psychological experiments related to the Uncanny Valley in question found that as the models increased in their realism and prototypicality, their levels of eeriness decreased, while their levels of human likeness increased, which they came to surmise "might evidence an uncanny valley" (Burleigh, Tyler J., et al., 765). Burleigh et. Al ultimately revealed "when stimuli are defined by a near-perfect resemblance to humans they cause people to experience greater negative affect relative to when they have perfect human likeness (HL) or little to no HL" (Burleigh, Tyler J., et al., 759). This was focusing on the dip in the "valley" which occurs suddenly after reaching levels of eeriness which could no longer be acceptable due to complex human psychology and natural instinct prompting us to look out for danger within certain AI. Rosenthal-von der Pütten, Astrid M., and Nicole C. Krämer investigated this matter as well, having questioned certain design characteristics based on factors such as previous impressions of robots and fresh experiences with

them. They questioned why “human-like form contributed to the perception of human-likeness. However, perceived human-likeness was not always linked to perceived likability, but likability depended on the overall design of the robot: more slender robots were for instance more likable and more bulky robots were less likable.” (Rosenthal-von der Pütten, Astrid, et al., 438). Increasing human-likeness now has increased in difficulty, as more factors such as how human beings perceive the robot and its role are introduced. The more complex the task, the more necessary it is for the robot to look like it can handle the part in order for regular people to like it actively working in their presence. Evaluating the robots as such could induce limitations that hinder design and AI-learning progress, which would slow down production of more advanced product designs while maintaining a healthy image of what a robot can and should accomplish. In addition, Burleigh et al. hit upon the topics discussed in Bibi van den Berg’s research by elaborating on the necessity of AI adapting to the human beings being tested on to surpass their previous limitations, as it could not do so itself without hitting a self-analytically induced limitation. Through analyzing this level of human complexity in interpreting a robot/AI’s level of eeriness, Bibi van den Berg discovered that “if a robot’s looks are quite sophisticated, it seems logical that individuals interacting with it will assume that its behaviors will be quite sophisticated as well – just like we assume a level of behavioral sophistication from our fellow human beings whenever we engage in interactions with them.” If this is not the case, and a sufficient difference exists between how the “robot” is supposed to look compared to a human and “a low level of behavioral refinement, this provokes a response of disgust and repulsion: the uncanny valley.” (Van Den Berg, Bibi, 182). With this eeriness in mind, in order for artificial intelligence to dig itself out of this valley, it must remain aware of the privacy concerns of users, and to not be overly pervasive as to not convince users that it is safe and reliable to include in their lives. Sensors, cameras, text analyzation software, facial

recognition, etc are all useful and trusted best when users have a say in how regulated this technology should be for them. Just because growing/emerging forms of technology such as Google Home are growing at an exponential rate, does not mean people are accepting of said technology at the same pace. It takes time for humans to build trust with other humans, even those similar to them. With that said, it will take time for humans to trust artificial intelligence created and designed by another human with the intention of being as human-like as possible. Essentially, we will have to grow to trust these creations in real time in order to witness their abilities and expand them further.

In the presence of the uncanny, several emotions would result in the viewer in question, as the feeling of eeriness will bring rise to feelings of disgust, distrust, discomfort, and the likes, perhaps decreasing the likelihood that artificially intelligent characters of both the physical and nonphysical realms would escape the valley. To advance artificial intelligence, Bibi van den Berg's research elaborated on the necessity of AI adapting to the human beings being tested on to surpass their previous limitations and escape this aforementioned valley, as it could not do so itself without hitting a self-analytically induced limitation. A robot only knows as much about being human-like based on the data it was given about humans. It cannot deduce natural human features by itself no matter how advanced the technology becomes, as it is not human to begin with, therefore running into "uncanny valleys" along its journey. By analyzing Facebook and its inaccurate (at the time) artificial intelligence software in friend suggestions, she realized how "it left the receiver feeling eerie", due to what she presumes would be "the simplicity of the message greatly [contrasting] with the intricacy, the 'wicked intelligence' some would argue" (Van Den Berg, Bibi, 185). This would be characterized by Tinwell and her team as psychopathic/deviant behavior, as it is behavior that doesn't correlate with what is supposed to be done and expected. If digital characters have this

aforementioned “psychopathy”, or rather “a low level of behavioral refinement, this provokes a response of disgust and repulsion” (Van Den Berg, Bibi, 182), especially if there are “aberrant facial expression” present in its design. The implications of such a character that seemingly has completely dropped into the valley after almost obtaining a bearable measure of human-likeness “may trigger a perception that it has psychopathic traits.” (Tinwell et al., 1623). In terms of furthering technology to benefit humankind, this would prove problematic, because even if it “may, *at least momentarily*, [raises] an adaptive alarm in the viewer” (Tinwell et al., 1623), human beings run the risk of somewhat permanently attaching the negative event with the AI, hindering its success and any chances of future redemption. One mistake would erase some, if not all, of the good it may have accomplished. It is no longer enough that the creation can pretend to have a high level of human-likeness through outdated smiles or movements. Human beings can see through the act and discern what is wrong with the situation with accuracy, and robots now have to catch up to our improving psychology with more improvements as Kriss Ravetto-Biagoli discusses in his book, *Digital Uncanny*. Take a robot dripping water from its eyes in a situation that calls for emotional response. What once was thought to be an easy depiction of sadness, quickly becomes confusing should the context not apply correctly. “Only as a sign can the tear become an indifferent and untimely aesthetic form. But without the face, how can we distinguish the tear from a drop of water” (Ravetto-Biagoli, 76) he asks. With context, we would be able to distinguish the actions and feelings of the robot in question and discern whether it has deviant/psychopathic intentions.

Allowing creators to understand the necessity of removing psychopathic traits in their products consciously produces a chance to create consumer grade products capable of sensing what humans are feeling in a situation. Tinwell and her colleagues’ research heavily concentrated on the concept of “psychopathy” in artificially intelligent creations, and how certain features allow

human beings to grow unnerved with them as a result. Focusing on the characteristics of the face and the lack of facial movement in response to startling stimuli, they connected these abnormal responses to feelings of psychopathy, eliciting a natural need in humans to escape from possible danger. By triggering a “perception that it has psychopathic traits,” (Tinwell et al., 1623), the human subjects would experience a number of negative emotions, such as the feelings of fear, anxiousness and angst, which would hinder improvement in the future due to causing a sense of distress in humans in a past experience with prototypical artificial intelligence. Instead of responding with a monotonous voice from your Google Home, devoid of humanness, the Google Assistant could grow over time to match the accent you share and adapt to responding with context by having normal conversations through experience. Kurt Gray and David M. Wegner would come to a similar conclusion, as they studied the importance of experience and agency, which are respectively described as the capacity to feel and sense as well as the capacity to do and act. Understanding that “a person perceived to lack experience, but not agency, should be seen as unnerving,” they came to the similar conclusion that those “who seem incapable of fear or love” (Gray, Kurt, and Daniel M. Wegner, 129) are psychopathic in nature, as they deviate from normal human norms and behaviors. Substantially increasing the experiences in both the qualitative and quantitative senses, an artificially intelligent product would be able to correspond efficiently in improving its functions, for it no longer just understands the what behind its actions, but also the why and the how behind them. By removing the repetitive nature for the sake of ease of programming, and allowing for continuous adaptations to everyday situations, AI could grow alongside us as mentioned previously to minimize human minds’ perceptions of unease and maximize the trust AI seemingly deserve through proof of action over time. Giving these unalive creations such as Google AdSense a platform to establish experienced body language or tone of



voice (audibly or through digital cues) would be imperative in allowing humans to feel out the current situation and decide whether it is safe to continue with certainty that the artificially intelligent subjects aren't out to get them. Letting Google AdSense "explain itself" in how it came to understand correctly/incorrectly what you may have desired while browsing for items to purchase would be better done with friendly notifications from time to time. Similar to a relative sending you items you might desire. Nick Stamatakis elaborated that "all over the internet, Google's AdSense targets you directly with services and products you probably want" (Stamatakis). Being as friendly and not as pushy as said relative would allow human beings to know their actions are being safely monitored for their own future usage and benefit without confusion and thoughts of ill-intentions. Certainly, this would be more efficient than pop-up ads catching us off guard on unrelated sites, making us question if Google is silently planning to milk us for money or if it really cares about our desires.

### **The Final Verdict: Can We Trust AI?**

The concept of experience is vitally important to the success of a product's longevity and viability in the real world filled with human beings, as revealed by Kurt Gray and David M. Wegner. The capacity to do and act alone is not enough to convince other human beings that there is a sense of livelihood instilled in the product that we could trust. Being devoid of the ability to perceive what is not directly existing would remove any chance of human beings to feel familiar and comfortable with the product at hand. Gray and Wegner's backgrounds in human psychology displayed how "although this research focused on strange minds—on feeling robots and unfeeling people—it speaks to the broader idea about what makes us human." (Gray, Kurt, and Daniel M. Wegner, 129), stating how varying levels of cognition separates the canny from the uncanny. Escaping the uncanny valley would require degrees of movements akin to those found in normal

human beings, establishing in humans a sense of familiarity and understanding in the things artificially intelligent creations are capable of accomplishing. Additionally, further allowing of artificially intelligent products to grow in experiences by making mistakes without excessive judgement would allow for greater leniency in human beings' minds when examining for errors in predictable locomotion. Following alongside this research, Piwek et al. went on to further establish how being familiar with an "unalive" creation's movements does not need to be convoluted and too complex to bear. Through their extensive research with differing animations, Piwek and his colleagues effectively found evidence going against Mori's original perception of motion's effects on the Uncanny Valley. Initially, it was believed, that motion would exacerbate both the peak of the as well as the valley in terms of affinity for the character depending on their design and static or dynamic behaviors, but there was never any empirical evidence to support this. Today's improvement in creating more human-like animations and virtual characters allowed Piwek's team to behold a consistently positive correlation between dynamic motion and acceptability. Therefore, human beings feeling the need to scrutinize an artificially intelligent product/character "might be caused by a violation of the brain's prediction that a character that looks a certain way will be associated with particular movements" (Piwek et al., 272)." Should the character not work in the way it is expected to, in a manner that we as humans are accustomed to, we will grow to trust it less. Learning from this, we can move to develop designs that take into consideration levels of motility to escape the valley that static characters tend to fall into. Innovative consumer products accomplishing their tasks while naturally coexisting with us would be less jarring to accept than products that we believe are "out to get us" or are always listening and watching with ill intent. Of course, even though they are not capable of possessing intentions of any kind in this current state, by advancing artificial intelligence, we can create higher levels of cognition through added

experiences and allow for the addition of feeling for what is right (morality, sympathy, empathy, etc), next to knowing what is right (standard good vs bad). Human beings would now have to tackle trusting artificial intelligence/robots, as well as tackle a problem older than artificial intelligence itself: trusting other human beings in making these seemingly pervasive products. This is a matter covered heavily by Forbes Media, specifically one article in which Gil Press covered the topic of cybersecurity and how people with ill intentions advance with AI as much as those with good intentions, if not more. Gil mentioned how big companies the likes of Google/Google AdSense, Facebook/ Facebook Beacon, Microsoft, etc, need to allow for the unhindered access to the improvement of AI so that it may escape the valley which consumers may reach, resulting in having nothing to do with the uncanny products. Problems with Facebook Beacon for instance arise because “Facebook exists solely in the uncanny valley. Facebook is not just a net catching our every subconscious whim via web searches — what we put on Facebook is very precise” (Stamatakis). We consistently feed these big companies very accurate information, but somehow have yet to receive finely tuned products from our own information. This makes matter worse, since AI is “largely based on freely available open source software. In addition, new insights, approaches and successful experiments are widely shared, as AI powerhouses such as Google and Facebook allow their top AI engineers to publish their work, which they need to do in order to stay in the race to attract and keep the best AI minds,”. He further elaborates on how ill-intentioned members of society, what with their unhindered “public access to datasets, algorithms, and new tools” and no morals/ethics to hold back their research, “there is no question that bad actors could also benefit from it” (Press). All that previously mentioned information and data that isn’t finely tuned by the companies could be abused should there be no way to regulate that information safely. While the good guys continue to do their work within acceptable standards, the bad guys grow

twice as fast, and the big companies can just sit back and watch it all unfold, only to pay a relatively small fine as a result of their carelessness. Of course, this causes great concern in the world of accepting AI as beneficial, and not the enemy of human beings. However, instead of running away from the problem, we need to learn from our mistakes with past AI in order to find a breakthrough for the future. Effective comprehension of case studies provided by Google and Facebook serve as tools to unravel the public opinion on AI. Understanding of the human psychology and the world of the atypical allows for further delving into the uncanny of our own minds. Believing in the uncanny is the first step to getting out of it, as the next is to believe that the valley is surmountable. These are all attainable outcomes. It won't be easy placing confidence in things we know little of, especially if "it is not determinable" in its form. In fact, it will be presented as "a return in the form of difference" (Freud), to which we would feel initial fears followed by snowballing effects of anxiety based on our initial terrors. On the other hand, humanity and societies never progressed by unwelcoming the unknown anyways, proving it's only logical to take coexisting with AI in strides as well as establish a health oversight on those creating said AI in order to truly open the positive side of Pandora's box.

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