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Authors

Wylie, Jordan

Gantman, Ana

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What is moral ambiguity and when does it trigger curiosity?

Jordan Wylie (jwylie@gradcenter.cuny.edu)¹
Ana Gantman (ana.gantman@brooklyn.cuny.edu)^{1,2}

1. Department of Psychology, The Graduate Center, CUNY

2. Department of Psychology, Brooklyn College

Abstract

Morality is a critical aspect of life—it influences how we think, design systems, and even the stories we tell. Looking to the popularity of true crime stories and characters like Dexter Morgan, it seems that our preferences are toward exploring moral ambiguity and moral badness. Across two experiments, we examine what moral ambiguity is and what kinds of moral information spark curiosity and explanation-seeking. In Experiment 1, we manipulate moral ambiguity to mean someone with conflicting moral character, and we predict those individuals will trigger curiosity more than morally consistent people. Results suggest that both morally ambiguous and immoral minds pique curiosity for explanations. In Experiment 2, we find that when ambiguity is instead operationalized as what is typical or average, we are curious about morally deviant things. This research points to critical differences in the kinds of moral minds we are curious to learn more about.

Keywords: morality; curiosity; epistemic emotion

Introduction

“I don’t know whether there are any moral saints. But if there are, I am glad that neither I nor those about whom I care most are among them.” - Susan Wolf (1982)

The pursuit of moral goodness is a central tenet of humanity—the rules that proscribe it emerge across time, cultures, and all religious texts. Yet, there is something about being relentlessly morally good that is plainly boring. This fact was famously pointed out by Philosopher Susan Wolf. Wolf argues that people have an aversion to faultlessly morally good others, or what she calls moral saints. On the one hand, this perspective is provocative. Moral goodness is foundational to individuals’ identity and character, and our moral selves are our truest selves (Strohming & Nichols, 2014). On the other hand, it is unsurprising, given what kinds of people are popular in fiction and on TV. In other words, we see our interest in immoral minds reflected in our preferences for characters like Dexter Morgan or Tony Soprano and movies like Batman. That is, by and large, people may be most curious about moral ambiguity and badness—which bring with it the opportunity to learn something about the world. In the present paper we first examine what moral ambiguity is, and then test whether moral ambiguity and moral badness trigger curiosity above and beyond moral goodness.

Morality dominates person perception and formation of self-concept (Landy et al., 2016; Brambilla et al., 2011), even in children (Heiphetz et al., 2018). It is a critical piece to our

lives, and that centrality is echoed in the attention that psychologists have given the topic. Moral psychological theory has focused extensively on identifying what people and cultures deem to be morally valuable, and how we deride and want to punish those who commit immoral actions. Some theories do this by defining the kind of content that counts as immoral and whether there is really just one or many (e.g., harm vs. moral foundations; Gray et al., 2012; Graham et al., 2011). Others focus on whether emotion is causal or essential in the formation of moral judgments (Prinz, 2006; May, 2018; Landy & Goodwin, 2015), or identifying which ethical principles best describe the moral judgment process (e.g., consequentialism vs. deontology; Conway & Gawronski, 2013). Each of these theoretical perspectives, regardless of their approach, share the fundamental assumption that people should, and often do, seek to maximize moral good.

These approaches are both generative and powerful because they are face valid. It is a shared assumption across cultures that morality is for promoting pro-social behavior (Curry, 2016) and avoiding harm (Bago et al., 2022), maximizing morally good behavior and minimizing morally bad behavior. However, by partaking in this shared assumption about maximizing moral good (but see Sun & Goodwin, 2021; Monin & Miller, 2001; see Merritt et al., 2010 for review), researchers have missed the everyday human behaviors and preferences that reveal our fascination with moral wrongness.

Revealed preferences (Samuelson, 1948) in daily life suggest moral ambiguity and moral badness are both interesting. For example, in the summer of 2008, the movie *The Dark Knight* grossed over \$1.005 billion dollars in box office sales, placing it as one of the highest-grossing movie openings in history. This story centers on the morally ambiguous Batman, who chooses his own self-interest over the greater good, and the Joker, who represents a life with no moral boundaries. The appeal of stories like *The Dark Knight*, and the many popular antiheroic stories that followed (e.g., Wolverine; Douglas, 2020; Krakowiak & Tsay-Vogel, 2015), stem from their representation of morality. Rather than create a world centered on bad-or-good, black-or-white characters, these stories craft their worlds around the conflict in the moral values, goals, and actions of the main characters. People find Christopher Nolan’s Batman and The Joker *fascinating* because they can teach us something about the complex nature of moral decision making in a setting where the stakes are low. These stories center moral ambiguity and badness, revealing something interesting about our moral

preferences—like in the case of the unpopular moral saint—moral goodness is usually just not all that interesting.

Moral Curiosity

Our interests in morally ambiguous themes suggest that we are curious to learn more. That is, moral ambiguity can trigger epistemic emotions, those emotions for which the catalyst is the individual's own cognitive state. These emotions are important features of our psychology—helping orient us toward effective ways of understanding and exploring our environments. For example, emotions like surprise, confusion, and curiosity are each considered epistemic emotions because they are triggered by cognitions related to beliefs about knowledge (Vogl et al., 2020). Such emotions are critical to problem solving, knowledge acquisition, exploration, and other largely epistemic functions (da Sousa, 2008; Pekrun & Stephens, 2012). They support belief-acquisition processes by making salient the times when contradictions and inconsistencies are relevant to a given task.

A combination of research and epistemological philosophy have outlined the characteristic features of an epistemic emotion (e.g., Brun et al., 2008). Here, we aim to use and extend this framework and to understand what drives interest in moral ambiguity and badness in the real-world. That is, we argue that akin to epistemic emotions, moral ambiguity and badness trigger curiosity to acquire, appraise, and understand that information—and ultimately the maintenance and construction of a coherent moral worldview. We aim to answer questions about the functional significance of moral ambiguity. Why is moral ambiguity and badness so prominently featured in our entertainment? Why is being a little morally bad so enticing? This research uses morality “as experienced” as a starting point to examine why moral ambiguity prompts engagement and explanation-seeking specifically.

Explanations in Morality

Explanations are fundamental to cognition. And it's no wonder—asking “why” facilitates cognitive development and help humans make sense of their worlds. Unlike similar epistemic behaviors like information-seeking (e.g., Kelly & Sharot, 2021), explanation-seeking takes the drive for knowledge one-step further to identify the reasons *behind* the target of curiosity. Explanation-seeking demonstrates that often the fact alone is not enough, we are hungry to know the “why”. Indeed, young children often display this need for why (Liquin & Lombrozo, 2020). When seeking explanations, they do not find mere attention sufficient—they really do want to know why (Chouinard et al., 2007) and show preferences towards information sources that provide the concrete sorts of reasons they are after (Corriveau & Kurkul, 2014). And while both children and adults seek explanations throughout development, this drive peaks around preschool age (ages 2-4; Chouinard et al., 2007) when the need to create knowledge structures that accurately represent the world is strong. Children are driven to build up

explanations for how the world looks and its rules, and they are motivated to resolve disequilibrium (Piaget 1955).

A quick search of Reddit's *Explain like I'm Five (ELI5)* reveals that adults are also often curious about the reasons that underlie or explain moral themes, including real world moral villains (e.g., many questions like: “What [were] Hitler's motives?”; “Just why, why was Stalin himself seemingly unimaginably evil?”). Much of the general structure of the world of an adult is already known, but the minds of others are consistently opaque to us. And the drive to understand and engage with the minds of others seems to be hard-wired. We have dedicated neural machinery that helps to support thinking about the intentions and thoughts of others (e.g., Young et al., 2010). Moral themes may particularly elicit interest because being right about what is moral and immoral has high stakes (Hackel et al., 2014). Questions about the moral atrocities that others have committed pique interest because they offer real information about how other people see the world, and real information about how good and evil operate. That is, explanations—insight into the minds of others—may be the most persistent epistemic motives that adults have because it is always relevant information to their understanding of how the world works (not to mention who we decide to trust; Simpson et al., 2013). In sum, we sought to test whether moral minds elicit explanation-seeking behaviors, and whether moral ambiguity specifically sparks our curiosity motivating because it is uncategorized and un-resolved (e.g., Ovsiankina, 1928), and in the moral domain, we tend to prefer clarity and reject nuance (e.g., Skitka, 2010) and seek to resolve it.

The Present Research

The present research integrates multiple theoretical perspectives to test what moral ambiguity is, and whether moral ambiguity and moral badness uniquely trigger curiosity. However, moral ambiguity can mean many things. For one, it can mean that a person or action is both good and bad, like stealing life-saving medicine (a very cinematic form of moral ambiguity). Another meaning of moral ambiguity is that there is conflict in someone's moral actions—they do some good things and some bad ones as we all do (a more quotidian form of ambiguity). We set out to test these two conceptions of moral ambiguity, which we will refer to as morally ambiguous (for the cinematic one) and morally average (for the more quotidian conceptualization) and compare curiosity for understanding people who are morally good, morally bad, morally ambiguous, and morally average. In Experiment 1, we compare curiosity for morally good, bad, and ambiguous people, operationalizing moral ambiguity as someone people agreed is morally ambiguous. In Experiment 2, we test curiosity for average morality, a kind of ambiguity created by the varied nature of an individual's actions (e.g., some good actions, some bad actions as well do) against morally good and bad actions. This formation of moral ambiguity more closely resembles how everyday people tend to behave. In contrast to those who behave only in morally non-normative ways, average people tend to do good things

and also make mistakes. On this view, interest may stem from the identification with moral ambiguity and its ability to reveal something relevant about one's own morality or the people one is most likely to meet. We also set out to explore whether individual differences predicted distinct patterns of curiosity for explanations.

In both experiments, we preregistered hypotheses and analyses prior to data collection. Overall, we predicted that morally ambiguous minds would pique our curiosity compared to moral goodness. We also predicted that people would be curious to learn explanations about morally bad people.

Experiment 1

Experiment 1 aimed to establish that individuals find morally ambiguous and bad information alluring and engaging. That is, Experiment 1 tested whether, contrary to many theories of morality, moral badness does not unilaterally spark disengagement, avoidance, or withdrawal. We predicted that participants would choose to learn about ambiguous others more than unambiguously good others. We were agnostic to whether participants would also find moral badness more interesting than moral ambiguity, but a difference between explanation-seeking for moral badness and moral goodness would nonetheless provide evidence for the claim that people do not solely seek to avoid moral badness. Instead, moral badness, like ambiguity, may pique our interest and draw us in for further investigation.

Method

Participants We recruited a total of 266 participants (82 from Queens College, 34 from Brooklyn College, and 150 from Prolific). An *a priori* power analysis based on pilot research was conducted, suggesting 270 participants was required. We collected additional consenting participants online using Prolific (accounting for about a 15% attention check failure rate). The only inclusion criterion for Prolific data collection was current United States residence. Prolific participants were paid \$3.40 on average for their participation and students participated in exchange for course credit. We conducted our analyses on a final sample of 218 participants ($M_{\text{age}} = 24.02$, $SD_{\text{age}} = 7.28$, Male = 55, Female = 148, Other = 15) who passed preregistered attention and comprehension checks. Additionally, we tested for, but did not find, any statistical differences between the different samples and do not discuss them further.

Procedure We used a fully within-in subjects design to examine the effect of moral character type (morally ambiguous, morally good, or morally bad) on curiosity. To examine curiosity, we used a modified empathy task (Cameron et al., 2019). Participants were introduced to two playing card decks, one called the “Describe” deck and one called the “Learn” deck and asked to select one on each trial. In the instructions portion of the experiment, participants were told about the kind of information available when selecting each of the decks, and they were told could select

any deck on any trial with freedom to change their minds whenever. The “Describe” deck participants were told they would see a single image of the person. For the “Learn” deck, participants were told they would see the actions of the person that lead to their moral categorization but no image. Assuming that descriptive information is generally more boring and not related to explanations compared to motive information, the addition of the picture allowed for us to create two closely matched options. Before the deck choice was made, participants saw a generic name (selected at random from a list of popular names in the United States; e.g., John Williams) and the moral character type manipulation. To manipulate whether a random name was good, bad, or ambiguous, we told participants that a group of previous participants rated the actions of each of the people they were shown. We made those ratings into a slider scale that indicated that the person was rated good, bad, or ambiguous on average by those independent raters (see Figure 1).

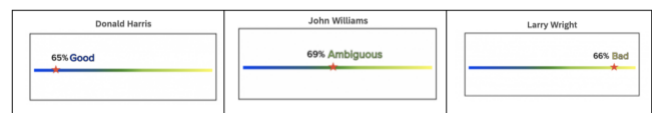


Figure 1: Examples of the moral character manipulation (morally good, ambiguous, and bad, respectively).

On each trial, participants were shown the two decks to select from, the name, and a slider scale in random order. For both decks, participants were also asked to write two keywords that describe the information they were shown and then answer questions about their interest in the character, and how good and bad the character is. This task was used to see whether individuals preferred to learn about the motives of morally ambiguous characters (vs. a description of their appearance). Indeed, in a pilot study we found that self-reported ratings of curiosity predicted more “Learn” deck choices, $b = 0.17$, $SE = 0.06$, $z = 2.75$, $p = .006$, $r = 0.05$. After participants made their initial decisions, they answered questions about their self-reported interest (“How interesting is this person?”) in the individuals they saw, how good and bad those people were, and whether they identified with them (“Do you feel as though this person is like you?”), all rated on a scale from 1 = *Not at all like me* to 9 = *Very much like me*. Finally, after participants completed 30 trials of the deck task, they completed six items from the Morbid Curiosity Scale (MCS; Scrivner, 2021), a modified essentialism scale (Bastian & Haslam, 2006) measuring evil/good essentialism, and the Need for Cognition scale (NFC; Cacciopio & Petty, 1982), and were debriefed.

Results

Manipulation Check Results suggested that the manipulation was successful. The good Moral Character Type was rated as more good than ambiguous, $b = 1.40$, $SE = 0.07$, $t(214) = 19.80$, $p < .001$, $r = 0.80$, and bad, $b = 2.89$, $SE = 0.11$, $t(216) = 26.92$, $p < .001$, $r = 0.88$ people. Additionally, bad Moral Character Type was rated as more bad than both good $b = 2.76$, $SE = 0.11$, $t(216) = 24.93$, $p < .001$, $r = 0.88$ people.

.001, $r = 0.86$, and ambiguous, $b = 1.22$, $SE = 0.07$, $t(213) = 16.68$, $p < .001$, $r = 0.75$ people.

Moral information seeking. Next, we examined which Moral Character Type sparked the most moral information seeking. To test this, we fit a mixed-effects regression model with by-participant random intercepts and slopes, Moral Character as a fixed effect, and identification as a covariate (pattern of results remains similar when excluding identification). Results partially supported predictions. Morally ambiguous individuals lead to significantly more curiosity than morally good individuals, $b = 0.41$, $SE = 0.10$, $z = 4.03$, $p < .001$, $r = 0.07 = 0.11$. However, morally bad people elicited the most curiosity by far: They lead to more “Learn” deck choices compared to both ambiguous individuals, $b = 0.66$, $SE = 0.09$, $z = 6.92$, $p < .001$, $r = 0.17$, and good individuals, $b = 1.07$, $SE = 0.12$, $z = 9.10$, $p < .001$, $r = 0.23$. Interestingly, when we entered self-reported interest as the outcome variable, the results flipped. Participants report that morally good individuals are more interesting than ambiguous $b = 0.72$, $SE = 0.08$, $t(212) = 9.48$, $p < .001$, $r = 0.55$ and bad people, $b = 1.34$, $SE = 0.11$, $t(215) = 12.44$, $p < .001$, $r = 0.65$.

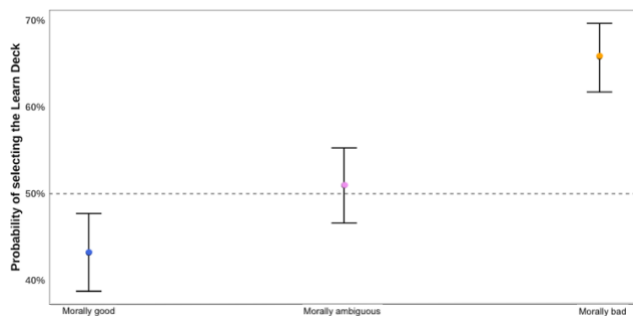


Figure 2: Probability of choosing the “Learn” deck for each of the Moral Character Types. Error bars depict 95% Confidence Intervals.

Individual Differences For each individual difference trait, we ‘glmer’ specified separate models that included the trait and the Moral Status Type as predictors as well as their interaction term to predict “Learn” deck choice. We first tested whether Morbid Curiosity was a statistically significant moderator. Results yielded no significant interaction, but Morbid Curiosity was significant predictor of “Learn” Deck choice, providing further evidence that learning about why taps curiosity motives ($b = 0.28$, $SE = 0.10$, $z = 2.78$, $p = .005$, $r = 0.08$). There were no statistically significant effects for the Need for Cognition or Evil Essentialism models.

Discussion

Overall, Experiment 1 provided mixed evidence for our pre-registered predictions. Moral ambiguity stemming from conflicting judgments about individuals led to more curiosity than morally good people, but they were significantly less likely to prompt moral motive seeking behavior than morally

bad individuals. This was in part surprising because we expected moral ambiguity to lead to the most moral information-seeking. However, looking to interest in serial killers and true crime, the pull of extremely non-normative moral others seems to be stronger than a motive to categorize those who are not plainly good or bad.

We also found that self-reported interest showed the opposite pattern of results. Participants self-reported being most interested in morally good others, which points to the self-monitored nature of morality. Our behavioral results suggest that asking directly who people are interested in may not be an effective strategy for studying morality in this way. We take this discrepancy between the behavioral and self-report findings as evidence of the need for a behavioral measure. Morality is central to our self-concept and self-image (Strohming & Nichols, 2014), and is therefore subject to self-presentation biases. Indeed, research suggests that participants are less likely to prefer movies with bad characters when self-presentation concerns are salient (Krause & Rucker, 2020).

Our results also do not yield insight into what it is about moral badness that is alluring. It is possible that it is simply a negativity bias, or that moral badness is non-normative. If it is about normativity of moral actions, then the less normal someone’s actions the more information they have the potential to provide. In the next experiment, we focus in on ambiguity that is elicited by committing both good and bad moral actions (morally average) and compare that to those with extreme moral status—people whose actions are only good or bad.

Experiment 2

In Experiment 2, rather than manipulating ambiguity by suggesting conflict in the categorization of a person (i.e., some people see them as good, others as bad), we created ambiguity by varying the kinds of *actions* people committed, creating an ambiguous person much more like the people in our everyday lives than the antiheroes on our TVs. We predicted that negativity would dominate curiosity. Specifically, that moral ambiguity and moral badness would both elicit more curiosity than extreme moral goodness. We were again agnostic to whether ambiguity and moral badness would stimulate different levels of curiosity.

Method

Participants We recruited a total of 335 participants from Prolific with the goal of preserving a sample size of about 270 to match the power analysis from Experiment 1. After excluding people who failed attention ($N = 4$) and manipulation comprehension ($N = 4$) checks and those with non-variance in deck choice responding ($N = 71$), we conducted analyses on a final sample of 256 participants ($M_{age} = 35.04$, $SD_{age} = 12.60$, Male = 121, Female = 129, Other = 6). Mirroring Experiment 1, the only inclusion criterion for Prolific data collection was current United State residence. Prolific participants were paid \$3.37 on average for their participation.

Procedure We again used a fully within-in subjects design to examine the effect of moral status (morally ambiguous, morally good, or morally bad) on curiosity. To manipulate moral character type, we told participants that we fed a computer algorithm the actions reported by a separate sample of people. The algorithm then categorized each of those actions as either morally good or morally bad. We randomly presented participants with distributions that were created by simulating data in R (we also included a series of data comprehension questions and omit anyone who did not understand the distributions from analyses). Each distribution had equivalent total N, variance, and absolute value of the average. An example of each of the three distributions is depicted in Figure 3.

Participants saw a distribution that corresponded to either a good person (actions all clustered around good), a bad person (actions all clustered around bad), or an ambiguous person (some bad and some good actions) and were then asked to select between the “Describe” deck and “Learn” decks. Here again, the “Describe” deck yielded information about the appearance of the person whose actions were categorized, and the “Learn” deck revealed their moral motivations and backstory. Participants made decisions for 30 distributions (10 of each moral character type).

After participants made all 30 decisions, we asked participants about the normality of each of the Moral Status types. They answered questions about how average (“How average”) and how ideal (“How ideal”) a representative good, bad, and ambiguous distributions was (i.e., normality; Bear & Knobe, 2017). These judgments were not made at the trial level. Participants then completed demographics questions, the same six items from the MCS and the NFC scale.

Finally, we asked participants questions about the task. We asked participants which deck was easiest, and which was most fun. Interestingly, while the majority (54%) of participants reported that the “Learn” deck was most fun, 86% reported that it was also the more difficult deck. This pattern suggests that effort related to mentalizing about others’ minds likely also played a large role in driving which information people sought across the two studies (see Cameron et al., 2019). Lastly, participants were debriefed and compensated for their time.



Figure 3: Example images of the moral status manipulation (good, ambiguous, bad, respectively). The pink distribution depicts actions that cluster around good while the blue depicts actions that cluster around bad.

Results

Moral information-seeking. We first tested whether people were more curious to learn about the moral motives of ambiguous and bad people compared to those that were

categorized as good. To test this, we fit a series of mixed-effects regression models each with by-participant random intercepts and Moral Status factor as a fixed effect. Using this specification, we found that participants selected the “Learn” deck more often for bad compared to ambiguous others, $b = 0.18$, $SE = 0.06$, $z = 3.02$, $p = .003$, $r = 0.05$, and for good compared to ambiguous others, $b = 0.14$, $SE = 0.06$, $z = 2.30$, $p = .021$, $r = 0.04$. People were more likely to select the “Learn” deck, revealing the moral motives for individuals categorized as bad (i.e., villains) and as good (i.e., heroes; see Figure 4).

Next, we tested whether the individual difference traits (MCS and NFC) influenced deck choice in two separate models. For both of those models, we created an interaction term that included the z-scored participant-level individual difference score and the Moral Status factor and included random slopes of the individual difference trait. Contrary to predictions, neither MCS nor NFC was a significant predictor, p 's $> .07$.

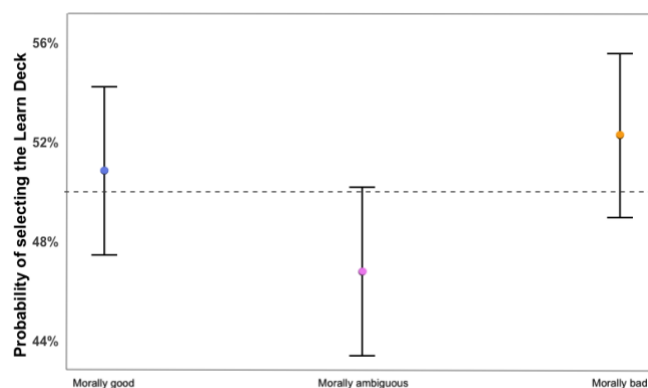


Figure 4: Probability of choosing the “Learn” deck for each of the Moral Status types. Error bars depict 95% Confidence Intervals.

Normality We also examined judgments of normality for each of the Moral Status types. We fit mixed-effects regression models with by-participant random intercepts and entered Moral Status as a fixed effect. Results revealed that ambiguous individuals were seen as most average compared to good, $b = 2.84$, $SE = 0.18$, $t(488) = 15.71$, $p < .001$, $r = 0.58$, and bad individuals, $b = 3.71$, $SE = 0.18$, $t(488) = 20.54$, $p < .001$, $r = 0.68$. We also found that good individuals were rated as more ideal than both ambiguous, $b = 2.70$, $SE = 0.16$, $t(732) = 16.49$, $p < .001$, $r = 0.52$, and bad, $b = 5.70$, $SE = 0.16$, $t(732) = 34.86$, $p < .001$, $r = 0.79$. Ambiguous individuals were also seen as more ideal than bad individuals, $b = 3.00$, $SE = 0.16$, $t(732) = 18.37$, $p < .001$, $r = 0.56$ (see Figure 5).

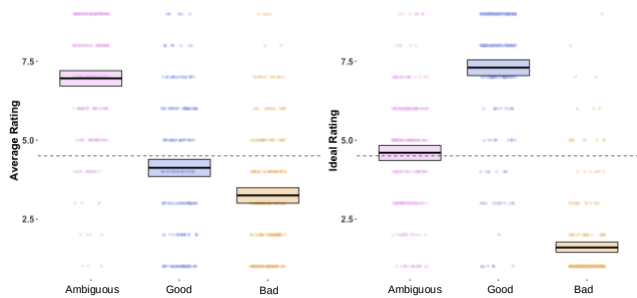


Figure 5: Normality judgments for each Moral Status type. The thick black line in the boxes represents the mean, and the edges represent bootstrapped standard errors.

Discussion

Overall, we found mixed support for our hypotheses. Again, morally bad individuals emerged as most interesting. Even though participants rated them as the least ideal, it is the minds of the bad guys that we are most curious about understanding their motives. Our manipulation of moral ambiguity also revealed interesting patterns of results. Although morally ambiguous minds did not spark curiosity for explanations to the degree that we predicted, we found that people see their worlds as mostly consisting of people who do both morally good and bad things, and the normality of those individuals make them more boring than those who deviate from normal moral behavior. We also found that people were interested in explanations about the minds of extremely morally good people. Here, it seems that whether people deviate from what is morally normal drove the kind of information people were interested in learning more about.

General Discussion

What do Tony Soprano, Dexter Morgan, and Harley Quinn have in common? These fictional characters commit acts of violence, yet we root for their success. Here, we examined the allure of people with morally ambiguous character and who committed morally ambiguous actions. Taken together, our results provide a path for understanding what moral ambiguity is, and evidence that both moral ambiguity and immorality can serve as triggers of curiosity for explanations. We found that when ambiguity refers to mixed moral character people find them more interesting than those who are morally good, but not those who are morally bad. In contrast, when ambiguity referred instead to the kinds of actions people commit (i.e., a mixture of good and bad acts), people rate them as resembling the average person, and are not motivated to seek explanations for their behavior or further understand their minds. When someone's actions clustered around only good or only bad, we found that people were more curious to learn about them. This suggests that how much an individual deviates from what is morally normative may hold the key for understanding both the motive to explore the minds of others, and the function. People whose morality differs from our own provides a learning opportunity—to learn about the inner workings of a mind different from our own or the ones we are familiar with.

We also found that deck decision and self-reported interest did not predict the same patterns of results in Experiment 1. People self-reported more interest for the morally good targets than the ambiguous or bad targets. We took this as evidence that the behavioral measure better captured curiosity for explanations. Morality is self-monitored and subject to impression-management concerns. Indeed, there is documented evidence that preference for movies that contain morally bad characters decreases under threat of social judgment (Krause & Rucker, 2020). Future research should investigate whether curiosity is greater for morally bad and ambiguous targets than morally good ones when the explanation information is held constant and the choice is instead between the moral target (rather than kind of information).

We also set out to explore whether individual differences could explain for whom morally deviant or morally conflicting information is interesting. We explored two candidates, Morbid Curiosity and Need for Cognition, but other measures that more closely relate to ease of thinking about the minds of others might provide a richer understanding of these behaviors. For example, empathy is known to be cognitively taxing (Cameron et al., 2019). People who have a hard time thinking about the minds of others may have experienced the task in fundamentally different ways than people who excel at that skill. Future work should integrate individual differences in ability to empathize and imagine the minds of others.

Borrowing from social psychological and neuroscientific research and philosophical work on epistemic emotions, we proposed that a primary motive in everyday life is to understand the moral minds of others. Our daily experiences with morality, reflected in the entertainment we are drawn to illustrate the allure of moral information. Here, we provide evidence of the allure of morally ambiguous and critically, of morally bad information. It is noteworthy that ambiguity and badness are more closely linked and elicit more motivation to learn about the minds of others than goodness. We take this unpredicted, but large difference as evidence that the basic assumption that people seek moral goodness is not always true (see also Pizarro & Baumeister, 2013). This inquiry provides new insight into the seemingly paradoxical delight of morally bad things, which we suggest motivate and inform what we explore.

References

- Bago, B., Kovacs, M., Protzko, J., Nagy, T., Kekecs, Z., Palfi, B., ... & Matibag, C. J. (2022). Situational factors shape moral judgements in the trolley dilemma in Eastern, Southern and Western countries in a culturally diverse sample. *Nature human behaviour*, 1-16.
- Bastian, B., & Haslam, N. (2006). Psychological essentialism and stereotype endorsement. *Journal of Experimental Social Psychology*, 42, 228-235.
- Bear, A., & Knobe, J. (2017). Normality: Part descriptive, part prescriptive. *cognition*, 167, 25-37.

- Brambilla, M., Rusconi, P., Sacchi, S., & Cherubini, P. (2011). Looking for honesty: The primary role of morality (vs. sociability and competence) in information gathering. *European journal of social psychology*, 41, 135-143.
- Brun, G., Kuenzle, D., & Doguoglu, U. (2008). Introduction: A new role for emotions in epistemology?.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of personality and social psychology*, 42, 116.
- Cameron, C. D., Hutcherson, C. A., Ferguson, A. M., Scheffer, J. A., Hadjiandreou, E., & Inzlicht, M. (2019). Empathy is hard work: People choose to avoid empathy because of its cognitive costs. *Journal of Experimental Psychology: General*, 148, 962.
- Chouinard, M. M., Harris, P. L., & Maratsos, M. P. (2007). Children's questions: A mechanism for cognitive development. *Monographs of the Society for Research in Child Development*, i-129.
- Conway, P., & Gawronski, B. (2013). Deontological and utilitarian inclinations in moral decision making: a process dissociation approach. *Journal of personality and social psychology*, 104(2), 216.
- Corriveau, K. H., & Kurkul, K. E. (2014). "Why does rain fall?": Children prefer to learn from an informant who uses noncircular explanations. *Child development*, 85, 1827-1835.
- Curry, O. S. (2016). Morality as cooperation: A problem-centred approach. In *The evolution of morality* (pp. 27-51). Springer, Cham.
- da Sousa, R. (2009). Epistemic feelings. *Mind and Matter*, 7, 139-161.
- Douglas, E. (2020, January 17). Why the increase in villain and anti-hero movies like *Venom* is such a welcome change.
- Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology*, 101, 366-385.
- Gray, K., Waytz, A., & Young, L. (2012). The moral dyad: A fundamental template unifying moral judgment. *Psychological Inquiry*, 23, 206-215.
- Hackel, L. M., Looser, C. E., & Van Bavel, J. J. (2014). Group membership alters the threshold for mind perception: The role of social identity, collective identification, and intergroup threat. *Journal of Experimental Social Psychology*, 52, 15-23.
- Heiphetz, L., Strohminger, N., Gelman, S. A., & Young, L. L. (2018). Who am I? The role of moral beliefs in children's and adults' understanding of identity. *Journal of Experimental Social Psychology*, 78, 210-219.
- Kelly, C., & Sharot, T. (2021). Individual differences in information-seeking. *Nature Communications*, 12, 1-13.
- Krakowiak, K. M., & Tsay-Vogel, M. (2015). The dual role of morally ambiguous characters: Examining the effect of morality salience on narrative responses. *Human Communication Research*, 41, 390-411.
- Krause, R. J., & Rucker, D. D. (2020). Can bad be good? The attraction of a darker self. *Psychological science*, 31, 518-530.
- Landy, J. F., Piazza, J., & Goodwin, G. P. (2016). When it's bad to be friendly and smart: The desirability of sociability and competence depends on morality. *Personality and social psychology bulletin*, 42, 1272-1290.
- Liquin, E. G., & Lombrozo, T. (2020). A functional approach to explanation-seeking curiosity. *Cognitive Psychology*, 119, 101276.
- May, J. (2018). The Limits of Emotion in Moral. *The Many Moral Rationalisms*, 286-306.
- Merritt, A. C., Effron, D. A., & Monin, B. (2010). Moral self-licensing: When being good frees us to be bad. *Social and personality psychology compass*, 4, 344-357.
- Monin, B., & Miller, D. T. (2001). Moral credentials and the expression of prejudice. *Journal of personality and social psychology*, 81, 33-43.
- Ovsiankina, M. (1928), "Die wideraufnahme unterbrochener Handlungen", *International Journal of Information Management*, Vol. 23, No. 1, pp. 55-65.
- Pekrun, R., & Stephens, E. J. (2012). Academic emotions. In *APA educational psychology handbook*, Vol 2: *Individual differences and cultural and contextual factors*. (pp. 3-31). American Psychological Association.
- Piaget, J. (1955). The development of time concepts in the child.
- Pizarro, D. A., & Baumeister, R. (2013). Superhero comics as moral pornography. *Our superheroes, ourselves*, 19-36.
- Prinz, J. (2006). The emotional basis of moral judgments. *Philosophical explorations*, 9, 29-43.
- Samuelson, P. A. (1948). Consumption theory in terms of revealed preference. *Economica*, 15(60), 243-253.
- Scrivner, C. (2021). The psychology of morbid curiosity: Development and initial validation of the morbid curiosity scale. *Personality and Individual Differences*, 183, 111139.
- Simpson, B., Harrell, A., & Willer, R. (2013). Hidden paths from morality to cooperation: Moral judgments promote trust and trustworthiness. *Social forces*, 91(4), 1529-1548.
- Skitka, L. J. (2010). The psychology of moral conviction. *Social and Personality Psychology Compass*, 4, 267-281.
- Strohminger, N., & Nichols, S. (2014). The essential moral self. *Cognition*, 131, 159-171.
- Sun, J., & Goodwin, G. P. (2020). Do people want to be more moral?. *Psychological Science*, 31, 243-257.
- Vogl, E., Pekrun, R., Murayama, K., & Loderer, K. (2020). Surprised–curious–confused: Epistemic emotions and knowledge exploration. *Emotion*, 20, 625-641.
- Wolf, S. (1982). Moral saints. *The Journal of Philosophy*, 79, 419-439.
- Young, L., Camprodon, J. A., Hauser, M., Pascual-Leone, A., & Saxe, R. (2010). Disruption of the right temporoparietal junction with transcranial magnetic stimulation reduces the role of beliefs in moral judgments. *Proceedings of the National Academy of Sciences*, 107, 6753-6758.