

Moral Valence and Semantic Intuitions

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[Under Review]

Despite the swirling tide of controversy surrounding the work of Machery et al. (2004), the cross-cultural differences they observed in semantic intuitions about the reference of proper names have proven to be robust. In the present article, we report a new set of significant cross-cultural and individual differences in semantic intuitions and show how the moral valence of actions described in experimental materials can sometimes affect participants' responses. We take these findings to provide further confirmation of the reality of cross-cultural and intra-cultural differences in semantic intuitions and to strengthen the philosophical challenge they pose.

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1. Introduction

In one of the most widely discussed papers in experimental philosophy, Edouard Machery, Ron Mallon, Shaun Nichols, and Stephen Stich (2004) presented findings showing that East Asian and Western participants report different intuitions about the semantic reference of proper names that appear in the following vignettes:

Gödel1. Suppose that John has learned in college that Gödel is the man who proved an important mathematical theorem, called the incompleteness of arithmetic. John is quite good at mathematics and he can give an accurate statement of the incompleteness theorem, which he attributes to Gödel as the discoverer. But this is the only thing that he has heard about Gödel. Now suppose that Gödel was not the author of this theorem. A man called 'Schmidt,' whose body was found in Vienna under mysterious circumstances many years ago, actually did the work in question. His friend Gödel somehow got hold of the manuscript and claimed credit for the work, which was thereafter attributed to Gödel. Thus, he has been known as the man who proved the incompleteness of arithmetic. Most people who have heard the name 'Gödel' are like John; the claim that Gödel discovered the incompleteness theorem is the only thing they have ever heard about Gödel. When John uses the name 'Gödel,' is he talking about:

- (A) The person who really discovered the incompleteness of arithmetic? or
- (B) The person who got hold of the manuscript and claimed credit for the work?

Gödel2. Ivy is a high-school student in Hong Kong. In her astronomy class she was taught that Tsu Ch'ung Chih was the man who first determined the precise time of the summer and winter solstices. But, like all her classmates, this is the only thing she has heard about Tsu Ch'ung Chih. Now suppose that Tsu Ch'ung Chih did not really make this discovery. He stole it from an astronomer who died soon after making the discovery. But the theft remained entirely undetected and Tsu Ch'ung Chih became famous for the discovery of the precise times of the solstices. Many people are like Ivy; the claim that

Tsu Ch'ung Chih determined the solstice times is the only thing they have heard about him. When Ivy uses the name 'Tsu Ch'ung Chih,' is she talking about:

- (A) The person who really determined the solstice times? or
- (B) The person who stole the discovery of the solstice times?

In Gödel¹ and Gödel², which were inspired by Kripke's (1972/1980, pp. 83-92) Gödel/Schmidt case, there is a description that contemporary speakers associate with a name but that is satisfied by someone other than the original bearer of the name. According to descriptivist approaches to the semantic reference of proper names, speakers associate a description with proper name, and the name refers to an object if that object uniquely or best satisfies the description. If the description is not satisfied by any object or if several objects equally satisfy the description, the name fails to refer. According to the causal-historical view, by contrast, a name may be introduced into a linguistic community with an accompanying description, but after this initial "baptism" the description plays no subsequent role in determining the name's referent. Successive uses of the term refer to the same object if those uses are connected to this first use via an appropriate causal chain. An object may fail to satisfy any description a language user may associate with the name and yet succeed in being its referent. Thus, descriptivism seems to require that (A) is the correct answer in both Gödel cases. However, according to the causal-historical view, (B) is correct.

Machery et al. (2004) found that 58% of Westerners (i.e., Rutgers University undergraduates of Western European descent) and 29% of East Asians (i.e., University of Hong

Kong undergraduates whose native language was Chinese¹) chose (B) as the correct response to the Gödel1 case, and 55% of Westerners and 32% of East Asians chose (B) for Gödel2.² Machery et al. (2004, B1) conclude that this cross-cultural variation in semantic intuitions “raises questions about the nature of the philosophical enterprise of developing a theory of reference” in general and about the causal-historical view in particular.

The work of Machery et al. has been attacked from a variety of angles, but additional empirical evidence has thwarted the most significant attacks. For example, in response to the charge that they were actually testing participants’ metalinguistic intuitions rather than their linguistic intuitions (Martí 2009), Machery et al. (2009) gathered data that showed that participant’s metalinguistic intuitions did not differ significantly from their linguistic intuitions. In response to Lam (2010), who pointed out the potentially problematic fact that Machery et al. had asked native Cantonese speakers about the semantic reference of English names rather than Cantonese names, Machery et al. (2010) replicated their original findings with Chinese translations. When Ludwig (2007) and Deutsch (2009) charged that the original probes did not make it sufficiently clear whether participants were being asked about speaker’s reference or semantic reference, Machery, Deutsch, and Sytsma (forthcoming) clarified the probes to make it clear that participants were being asked about semantic reference and still found significant cross-cultural differences. According to a potentially devastating objection from Sytsma and Livengood (2011), there was an important ambiguity in Machery et al.’s probe questions between whether participants should understand the Gödel cases from the limited epistemic perspective of the central protagonist or from the omniscient narrator’s perspective. In a

¹ All research materials were written in English. Since the official language of instruction for all course at the University of Hong Kong is English, there should not be any worries about the East Asian students’ comprehension of the materials.

² These percentages are reported in Machery (2012, 40).

companion piece to the present article [reference omitted for blind review], we have shown that cross-cultural differences remain when the proper epistemic perspective is clarified. The unanimity of these follow up results suggest that the cross-cultural differences observed by Machery et al. with the original Gödel cases are quite robust.

Although the various follow-up experiments that have been performed show that Machery et al.'s original results were not a fluke, a few outstanding explanatory questions remain. One concerns the range of cases in which we can expect to find cross-cultural differences in semantic intuitions. With only two exceptions that we know of, all of the studies that have uncovered cross-cultural differences in intuitions about the reference of proper names have used either the Gödel1 or Gödel2 vignettes. The only differences between these studies have concerned the wording of the questions that participants were asked after reading these vignettes. The two exceptions to this rule come from our [reference omitted for blind review], in which we report cross-cultural differences in response to Machery et al.'s (2004) "Jonah" cases and slightly different versions of their Gödel cases.

In that paper, we constructed alternative Gödel cases because Gödel1 begins by presupposing that Gödel really did discover the incompleteness of arithmetic but then asks participants a few sentences later to suppose that he did not. We wondered whether participants would be able to keep track of the right set of presuppositions, and so constructed modified versions of Gödel1 and Gödel2 in which the relevant presuppositions were presented in an easy to follow manner. The same pattern of cross-cultural differences was observed—Western participants were more likely have Kripkean intuitions about these cases than East Asians.

We also reported finding cross-cultural differences in response to two cases that Machery et al. (2004) patterned after Kripke's (1972/1980, pp. 66-67) well-known Jonah case:

Jonah1. In high-school, German students learn that Attila founded Germany in the second century A.D. They are taught that Attila was the king of a nomadic tribe that migrated from the east to settle in what would become Germany. Germans also believe that Attila was a merciless warrior and leader who expelled the Romans from Germany, and that after his victory against the Romans, Attila organized a large and prosperous kingdom.

Now suppose that none of this is true. No merciless warrior expelled the Romans from Germany, and Germany was not founded by a single individual. Actually, the facts are the following. In the fourth century A.D., a nobleman of low rank, called 'Raditra,' ruled a small and peaceful area in what today is Poland, several hundred miles from Germany. Raditra was a wise and gentle man who managed to preserve the peace in the small land he was ruling. For this reason, he quickly became the main character of many stories and legends. These stories were passed on from one generation of peasants to the next. But often when the story was passed on the peasants would embellish it, adding imaginary details and dropping some true facts to make the story more exciting. From a peaceful nobleman of low rank, Raditra was gradually transformed into a warrior fighting for his land. When the legend reached Germany, it told of a merciless warrior who was victorious against the Romans. By the eighth century A.D., the story told of an Eastern king who expelled the Romans and founded Germany. By that time, not a single true fact remained in the story.

Meanwhile, as the story was told and retold, the name 'Raditra' was slowly altered: it was successively replaced by 'Aditra,' then by 'Arritrak' in the sixth century,

by ‘Arrita’ and ‘Arrila’ in the seventh and finally by ‘Attila.’ The story about the glorious life of Attila was written down in the eighth century by a scrupulous Catholic monk, from whom all our beliefs are derived. Of course, Germans know nothing about these real events. They believe a story about a merciless Eastern king who expelled the Romans and founded Germany.

When a contemporary German high-school student says “Attila was the king who drove the Romans from Germany,” is he actually talking about the wise and gentle nobleman, Raditra, who is the original source of the Attila legend, or is he talking about a fictional person, someone who does not really exist?

(A) He is talking about Raditra.

(B) He is talking about a fictional person who does not really exist.

*Jonah*². Lau Mei Ling is a high-school student in the Chinese city of Guangzhou. Like everyone who goes to high-school in Guangzhou, Mei Ling believes that Chan Wai Man was a Guangdong nobleman who had to take refuge in the wild mountains around Guangzhou in the eleventh century A.D., because Chan Wai Man was in love with the daughter of the ruthless Government Minister Lee, and the Minister did not approve. Everyone in Lau Mei Ling’s high-school believes that Chan Wai Man had to live as a thief in the mountains around Guangzhou, and that he would often steal from the rich allies of the Minister Lee and distribute their goods to the poor peasants.

Now suppose that none of this is true. No Guangdong nobleman ever lived in the mountains around Guangzhou, stealing from the wealthy people to help the peasants. The real facts are the following. In one of the monasteries around Guangzhou, there was a

helpful monk called ‘Leung Yiu Pang.’ Leung Yiu Pang was always ready to help the peasants around his monastery, providing food in the winter, giving medicine to the sick and helping the children. Because he was so kind, he quickly became the main character of many stories. These stories were passed on from one generation of peasants to the next. Over the years, the story changed slowly as the peasants would forget some elements of the story and add other elements. In one version, Leung Yiu Pang was described as a rebel fighting Minister Lee. Progressively the story came to describe the admirable deeds of a generous thief. By the late fourteenth century, the story was about a generous nobleman who was forced to live as a thief because of his love for the Minister’s daughter. At length, not a single true fact remained in the story.

Meanwhile, the name ‘Leung Yiu Pang’ was slowly altered: it was successively replaced by ‘Cheung Wai Pang’ in the twelfth century, ‘Chung Wai Man’ in the thirteenth, and finally by ‘Chan Wai Man.’ The story about the adventurous life of Chan Wai Man was written down in the fifteenth century by a scrupulous historian, from whom all our beliefs are derived. Of course, Mei Ling, her classmates and her parents know nothing about these real events. Mei Ling believes a story about a generous thief who was fighting against a mean minister.

When Mei Ling says “Chan Wai Man stole from the rich and gave to the poor,” is she actually talking about the generous monk, Leung Yiu Pang, who is the original source of the legend about Chan Wai Man, or is she talking about a fictional person, someone who does not really exist?

(A) She is talking about the generous monk, Leung Yiu Pang.

(B) She is talking about a fictional person who does not really exist.

According to descriptivism, the correct answer in both Jonah cases is (B) because there is no one who satisfies the description associated with the names in question. On the causal-historical view, however, satisfying the description is not necessary for the name to denote anyone, and so (A) is the correct answer. Like Machery et al. (2004), we initially did not find robust cross-cultural differences in intuitions about Jonah1 and Jonah2. However, when we presented participants with the following, modified probe questions, we did find such differences:

Jonah3. When a contemporary German high-school student says “Attila was the king who drove the Romans from Germany,” is he actually talking about the wise and gentle nobleman, Raditra?

(A) He is talking about Raditra.

(B) He is not talking about Raditra.

Jonah4. When Mei Ling says “Chan Wai Man stole from the rich and gave to the poor,” is she actually talking about the generous monk, Leung Yiu Pang?

(A) She is talking about the generous monk, Leung Yiu Pang.

(B) She is not talking about the generous monk, Leung Yiu Pang.

In both cases, Western participants were significantly more likely to choose the Kripkean answer (A) than East Asians.

The fact remains, however, that very few cases have been employed in the empirical investigation of semantic intuitions. New, additional vignettes are needed so that we can see how

wide the range is in which cross-cultural differences can be found. In the studies we describe below, we report the results of using new experimental materials. We also examined the role that moral valence might play in generating cross-cultural and individual differences in semantic intuitions. One important feature of Gödel1 and Gödel2 is that they both involve greed and intellectual theft. In Gödel1, there is even a dead body that turns up under mysterious circumstances. If there are cross-cultural differences in sensitivity to moral violations, we reasoned that this might have a distorting effect on participants' intuitions about these cases. Therefore, in our first study we constructed variants of the Gödel cases that did not involve wrongdoing. Since the original Jonah cases did not involve wrongdoing, we introduced elements of selfishness, dishonesty, and treachery into these stories for the sake of parity. In Study 2, we examined the possible effects of moral valence in further detail and found that wrongdoing can sometimes significantly affect individuals' semantic intuitions.

2. Study 1a: Cross-Cultural Differences

In Study 1, 145 undergraduate students of Western European ancestry (average age = 21, 43% female) from a large, public university in the northeastern United States and 32 undergraduate students from Hong Kong University (average age = 28, 63% female) were shown each of the four vignettes below.³ The order of the vignettes was counterbalanced. Participants were offered either extra credit in a college course or a chance to win a \$175 gift card. Questionnaires were administered via an online platform hosted by vovici.com.

³ An additional 7 American college students of non-western descent and 2 HKU students who were not native Chinese speakers participated in the study but were excluded from the analysis.

Good Gödel1. Suppose that John has learned in college that Gödel is the man who proved an important mathematical theorem, called the incompleteness of arithmetic. John is quite good at mathematics and he can give an accurate statement of the incompleteness theorem, which he attributes to Gödel as the discoverer. But this is the only thing that he has heard about Gödel. Now suppose that Gödel was not the author of this theorem. A man called ‘Schmidt’ actually did the work in question. However, because Gödel was widely recognized at the time of the discovery to be the greatest mathematician in the world and because Schmidt was relatively unknown, many journalists and historians have wrongly attributed the discovery to Gödel. Most people who have heard the name ‘Gödel’ are like John; the claim that Gödel discovered the incompleteness theorem is the only thing they have ever heard about Gödel.

When John uses the name ‘Gödel,’ is he talking about:

- (A) the person who really discovered the incompleteness of arithmetic? or
- (B) the person to whom the discovery is often wrongly attributed?

Good Gödel2. Ivy is a high-school student in Hong Kong. In her astronomy class she was taught that Tsu Ch’ung Chih was the man who first determined the precise time of the summer and winter solstices. But, like all her classmates, this is the only thing she has heard about Tsu Ch’ung Chih. Now suppose that Tsu Ch’ung Chih did not really make this discovery. A man called ‘Zhang Shoujing’ actually made the discovery. Because Tsu Ch’ung Chih was the most famous astronomer in China at the time and because Zhang Shoujing was relatively unknown, people throughout history have wrongly attributed the

discovery to Tsu Ch'ung Chih. Everybody is like Ivy; the claim that Tsu Ch'ung Chih determined the solstice times is the only thing people have heard about him.

When Ivy uses the name 'Tsu Ch'ung Chih,' who do you think she is talking about?

(A) the person who (unbeknownst to Ivy) really determined the solstice times? or

(B) the person who is widely (but incorrectly) believed to have discovered the solstice times?

Bad Jonah1. In high-school, German students learn that Attila founded Germany in the second century A.D. They are taught that Attila was the king of a nomadic tribe that migrated from the east to settle in what would become Germany. Germans also believe that Attila was a merciless warrior and leader who expelled the Romans from Germany, and that after his victory against the Romans, Attila organized a large and prosperous kingdom.

Now suppose that none of this is true. No merciless warrior expelled the Romans from Germany, and Germany was not founded by a single individual. Actually, the facts are the following. In the fourth century A.D., a nobleman of low rank, called 'Raditra,' ruled a small area in what today is Poland, several hundred miles from Germany. Raditra was a selfish and dishonest ruler who constantly worried that the peasants living in his land might one day rise up in rebellion against him. In order to make the peasants have greater fear and respect for him, he constructed an entirely false legend about his peace-loving grandfather, Attila. Raditra told the peasants that Attila was a bloodthirsty warrior who succeeded in driving out the Romans and establishing Germany as a nation by his utterly ruthless tactics in battle. By claiming to be descended from a mighty warrior and

leader, Raditra succeeded in making the peasants in his land afraid to question his rule. This story was eventually passed on from one generation of peasants to the next and was believed to be true. Of course, Germans know nothing about these real events. They believe a story about a merciless Eastern king who expelled the Romans and founded Germany.

Please answer the following questions on the assumption that the preceding story is true.

1. Is the following statement true or false?

“Attila founded Germany in the second century A.D.”

(A) True

(B) False

2. Is the following statement true or false?

“Raditra was descended from a ruthless warrior who founded Germany in the second century A.D.”

(A) True

(B) False

3. When a contemporary German high-school student says “Attila was the king who drove the Romans from Germany,” is he actually talking about Raditra’s peace-loving grandfather?

(A) He is talking about Raditra’s peace-loving grandfather.

(B) He is not talking about Raditra’s peace-loving grandfather.

*Bad Jonah*². Lau Mei Ling is a high-school student in the Chinese city of Guangzhou. Like everyone who goes to high-school in Guangzhou, Mei Ling believes that Chan Wai

Man was a Guangdong nobleman who had to take refuge in the wild mountains around Guangzhou in the eleventh century A.D., because Chan Wai Man was in love with the daughter of the ruthless Government Minister Lee, and the Minister did not approve. Everyone in Lau Mei Ling's high-school believes that Chan Wai Man had to live as a thief in the mountains around Guangzhou, and that he would often steal from the rich allies of the Minister Lee and distribute their goods to the poor peasants.

Now suppose that none of this is true. No Guangdong nobleman ever lived in the mountains around Guangzhou, stealing from the wealthy people to help the peasants. The real facts are the following. In one of the monasteries around Guangzhou, there was a treacherous monk called 'Leung Yiu Pang.' Leung Yiu Pang was always looking for ways to trick the peasants around his monastery out of their food and other possessions. Because he was so deceitful, he became to be widely hated. One day, in order to make himself look more important in the eyes of a newcomer to the village than he really was, Leung Yiu Pang constructed an entirely false legend about his great-grandfather, Chan Wai Man, a rice farmer. Leung Yiu Pang told the man that Chan Wai Man was a rebel who fought against Minister Lee, stole from the rich and gave generously to the poor. Leung Yiu Pang continued to tell the counterfeit story about his great-grandfather throughout his lifetime, and eventually it became one about a generous nobleman who was forced to live as a thief because of his love for the Minister's daughter. At length, there was not a single true fact in the story. This story was eventually passed on from one generation of peasants to the next and was believed to be true. Of course, Mei Ling, her classmates and her parents know nothing about these real events. Mei Ling believes a story about a generous thief who was fighting against a mean minister.

1. Is the following statement true or false?

“Chan Wai Man was a Guangdong nobleman who lived in the mountains around Guangzhou and was forced to live as a thief because of his love for the Minister’s daughter.”

(A) True

(B) False

2. Is the following statement true or false?

“Leung Yiu Pang was descended from a Guangdong nobleman who lived in the mountains around Guangzhou and was forced to live as a thief because of his love for the Minister’s daughter.”

(A) True

(B) False

3. When Mei Ling says “Chan Wai Man stole from the rich and gave to the poor,” is she actually talking about Leung Yiu Pang’s great-grandfather, the rice farmer?

(A) She is talking about Leung Yiu Pang’s great-grandfather, the rice farmer.

(B) She is not talking about Leung Yiu Pang’s great-grandfather, the rice farmer.

The parenthetical remarks in Good Gödel²—viz., ‘(unbeknownst to Ivy)’ and ‘(but incorrectly)’—are patterned after Machery et al.’s (2009) and Sytsma and Livengood’s (2011) attempts to clearly indicate to participants that they should think about semantic reference rather than speaker’s reference. A Wilcoxon signed-rank test revealed that these remarks made no appreciable difference to participants’ responses. Consequently, data from the two cases were

collapsed in the analysis below. The first two questions that appear after each Jonah case were comprehension questions designed to ensure that participants understood the research materials.

The proportion of Kripkean responses to the Good Gödel and Bad Jonah cases are represented in Figure 1.

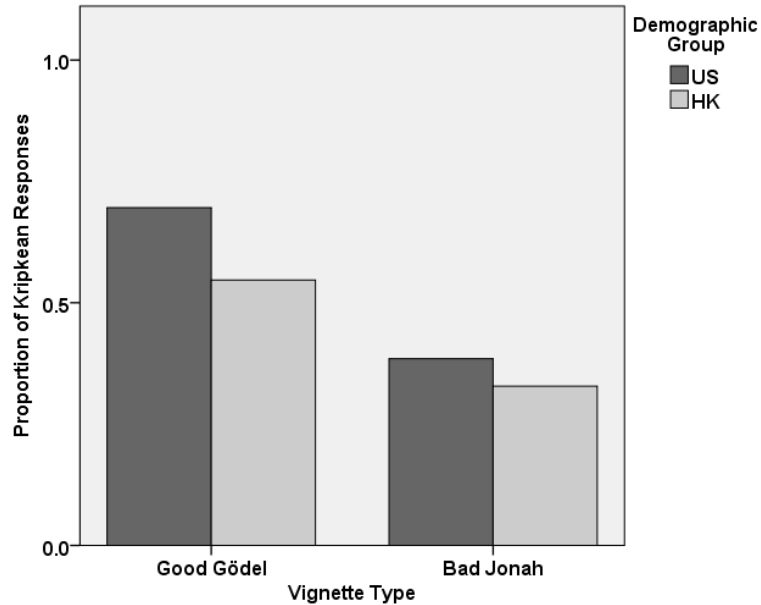


Figure 1. Proportions of Kripkean responses given to the Good Gödel cases by Western (.68) and East Asian (.44) participants and to the Bad Jonah cases by Western (.39) and East Asian (.34) participants in Study 1.

In response to the Good Gödel cases, Western participants were significantly more likely than East Asian participants to choose the Kripkean answer.⁴ The two demographic groups did not differ significantly in their responses to the Bad Jonah cases. Within each demographic group, participants were more likely to report Kripkean intuitions about the Good Gödel cases than the

⁴ $\chi^2(1, N = 352) = 5.407, p < .05$, Cramér's $V = .12$ (small effect size).

Bad Jonah cases.⁵ The Gödel data thus provide further confirmation of Machery et al.'s finding of cross-cultural differences in semantic intuitions about Gödel cases.

The results from the Jonah cases are not significantly altered when the data are restricted to those participants who answered both of the Jonah comprehension questions correctly. Study 1 thus reproduces the difficulty most researchers have encountered in trying to find cross-cultural differences in intuitions about Jonah cases. Most importantly for our purposes is the fact that the overall pattern of the data from Study 1 match the findings of Machery et al. (2004) and [reference omitted for blind review], where Bad Gödel and Good Jonah cases were used. This means that the modified moral valence of the actions described in the Gödel and Jonah cases did not significantly affect the semantic intuitions of our participants. In addition to providing one more instance where cross-cultural differences in semantic intuitions were found, the fact that moral valence was not observed to affect participant responses increases the confidence we can have in previous results.

3. Study 1b: Individual Differences

Most of the debate about the philosophical challenges posed by the work of Machery and his collaborators has focused on the cross-cultural variation in semantic intuitions they observed. However, Machery et al. (2004, B8) maintain that intra-cultural variation raises an equally important challenge:

While our focus has been on cultural differences, the data also reveal considerable intra-cultural variation. The high standard deviations in our experiment indicate that there is a great deal of variation in the semantic intuitions within both the Chinese and Western

⁵ US: $\chi^2(1, N = 576) = 56.643, p < .001$, Cramér's $V = .31$ (medium effect size). HK: $\chi^2(1, N = 128) = 6.222, p < .05$, Cramér's $V = .22$ (small effect size).

groups. This might reflect smaller intra-cultural groups that differ in their semantic intuitions. A more extreme but very live possibility is that the variability exists even at the individual level, so that a given individual might have causal-historical intuitions on some occasions and descriptivist intuitions on other occasions. If so, then the assumption of universality is just spectacularly misguided.

In order to investigate intra-cultural or individual variation within our sample, we computed a Kripkean intuition score for each participant in Study 1 by assigning a '1' to each Kripkean response given to the four vignettes above. In both the Western and East Asian participant samples, the median and mode scores were 2 (cf. Figure 2). The distributions of Kripkean intuition scores for the two groups approximated the normal distribution, and the distributions did not differ significantly from each other. If the causal-historical account of names were the correct model for ordinary linguistic usage, one might have expected distributions that were skewed by a preponderance of higher scores.

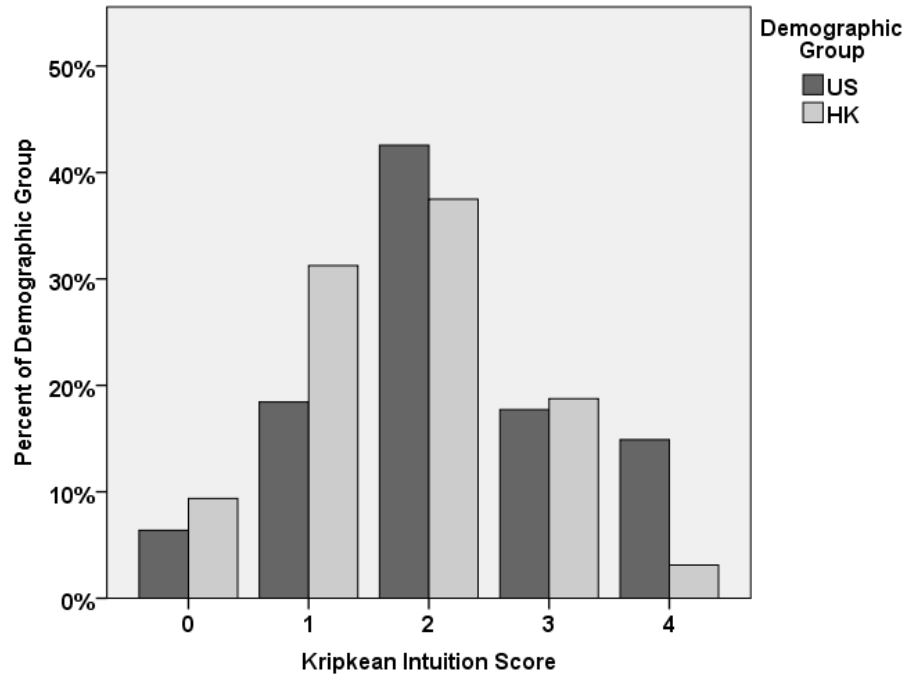


Figure 2. Percentages of Western and East Asian participants with different Kripkean intuition scores in Study 1.

In an effort to capture further aspects of intra-cultural or individual differences, we also directed half of the participants in Study 1 to complete a ten-item personality inventory that measures the Big Five personality traits of extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Gosling, Rentfrow, and Swann 2003). The Big Five model is currently the most widely accepted framework for assessing the broadest features of human personality and has been shown to apply cross-culturally (McCrae et al., 1996; McCrae & Costa, 1997; Rolland, 2002; McCrae et al., 2005). Those participants who did not complete the Big Five inventory were given the Moral Attentiveness Scale that measures the extent to which individuals habitually observe and think about morally relevant features of their experience (Reynolds 2008). According to Reynolds (2008, 1028) the morally attentive individual “views incoming stimuli through a lens focused on the concepts of morality and relies

on that lens to make sense of experience.” We chose this measure because we wondered whether individual differences in sensitivity to moral violations might affect semantic intuitions about cases involving moral wrongdoing.

Among Western participants, Kripkean intuition scores were positively correlated with the traits of conscientiousness ($r = .6, p < .05$, a large effect size) and moral attentiveness ($r = .25, p < .05$, a small effect size). Conscientiousness (sometimes called ‘will to achieve’) is a cluster of traits that includes self-discipline, efficiency, organization, and dependability. Focusing on Western responses to the Gödel cases in particular, associations between Kripkean responses, on the one hand, and conscientiousness and moral attentiveness, on the other, approached significance.⁶ In regard to the Jonah cases, the proportion of Kripkean responses among Western participants were positively associated with moral attentiveness and extraversion.⁷ Extraversion is a trait associated with positive affect and being outgoing, energetic, sociable, assertive, and talkative. The association between agreeableness and Kripkean responses to the Jonah cases approached significance.⁸ Agreeableness concerns a person’s tendency to be warm, friendly, compassionate, considerate, cooperative, trusting, helpful, and concerned about social harmony.

Among our East Asian participants, we observed no significant correlations between Kripkean intuition scores and any of the measures of individual differences we employed, probably because of our small sample size. However, some of the measures did approach significance—viz., the correlation between Kripkean intuition scores and self-reported emotional

⁶ Conscientiousness: $\chi^2(9, N = 137) = 15.407, p = .08$, Cramér’s $V = .34$ (medium effect size). Moral attentiveness: $\chi^2(34, N = 143) = 47.201, p = .066$, Cramér’s $V = .58$ (large effect size).

⁷ Moral attentiveness: $\chi^2(34, N = 143) = 49.984, p < .05$, Cramér’s $V = .59$ (large effect size). Extraversion: $\chi^2(12, N = 139) = 29.195, p < .01$, Cramér’s $V = .46$ (medium effect size).

⁸ $\chi^2(10, N = 139) = 17.318, p = .069$, Cramér’s $V = .35$ (medium effect size).

stability⁹ and the association between Kripkean intuitions in the Jonah cases and conscientiousness¹⁰ and openness to experience.¹¹

The effect sizes associated with our measures of personality traits (the Big Five and moral attentiveness) range from small to large. However, the intra-cultural variation in Kripkean intuition scores seems to constitute the most theoretically significant kind of variance. Machery et al. (2009, p. 693) argue that “within-culture variation poses exactly the same philosophical challenge as cross-cultural variation.” Theories of reference that purport to capture ordinary usage but fail to predict or ignore wide variation in actual practice face a significant explanatory challenge.

4. Study 2a

In our first study, eliminating elements of wrongdoing from Machery et al.’s (2004) Gödel cases and adding them to their Jonah cases did not result in any changes in how participants responded to them. However, because of the wide range of cases in the Knobe effect literature in which the moral valence of an agent’s actions has been shown to affect the way individuals understand various features of the agent’s psychological states and broader situation, we were not content to let this null result of Study 1 serve as the last word on the relationship between moral valence and semantic intuitions.¹² Therefore, in Study 2a we crafted a new set of vignettes that differed from one another in their moral valence.

⁹ $r = .41$ (medium effect size), $p = .064$.

¹⁰ $\chi^2(6, N = 42) = 12.561$, $p = .051$, Cramér’s $V = .55$ (large effect size).

¹¹ $\chi^2(6, N = 42) = 11.274$, $p = .08$, Cramér’s $V = .52$ (large effect size). Openness to experience is associated with creativity, curiosity, imagination, variety, emotional self-awareness, and a preference for novelty, adventure, art, and beauty.

¹² For overviews of the Knobe effect literature, see Knobe (2010) and Alfano, Beebe, and Robinson (2012).

Employing a between-subjects design, 124 undergraduates (average age = 20, 64% female, 48% Caucasian) from a large, public university in the northeastern United States participated in Study 2a in a classroom setting. The first version of the Gödel-style vignette we employed was the following:

*Satyricon*1. Suppose that John was told in college that Titus Petronius was the man who wrote a famous Latin work of fiction, called *Satyricon*. John is very knowledgeable about classical literature and knows *Satyricon* well. He attributes authorship of the book to Titus Petronius, but this is the only thing he knows about Titus Petronius.

But now suppose that Titus Petronius was not the author of this book. In fact, the author was Gaius Petronius, the brother of Titus Petronius. Titus only received credit for writing the book after Gaius accidentally wrote his brother's name on the cover.

Most people who have heard the name ‘Titus Petronius’ are like John—the claim that Titus Petronius wrote *Satyricon* is the only thing they have ever heard about Titus Petronius.

When John uses the name ‘Titus Petronius,’ is he talking about:

- (A) The person who actually wrote *Satyricon*? Or
- (B) The person whose name was written on the cover?

The remaining two versions of the vignette substituted the following passages for the underlined portion of *Satyricon*1:

Satyricon2. In fact, the author was Gaius Petronius. Titus was the jealous brother of Gaius who murdered Gaius and took credit for *Satyricon*.

Satyricon3. In fact, the author was Gaius Petronius, the brother of Titus. Because Gaius was extremely shy, he asked that his brother Titus take credit for the *Satyricon*. Titus obliged.

The (B) answer choices associated with *Satyricon2* and *Satyricon3* were changed to ‘The person who murdered his brother and took credit for the *Satyricon*’ and ‘The person who was asked by his brother to take credit for the *Satyricon*,’ respectively. All other features of the vignettes and probe questions remained the same.

As in Gödel1 and Gödel2, in the *Satyricon* cases there is a description that speakers associate with a name but that is satisfied by someone other than the original bearer of the name. But only in *Satyricon2* is there an element of moral wrongdoing. Participant responses are summarized in Figure 3.

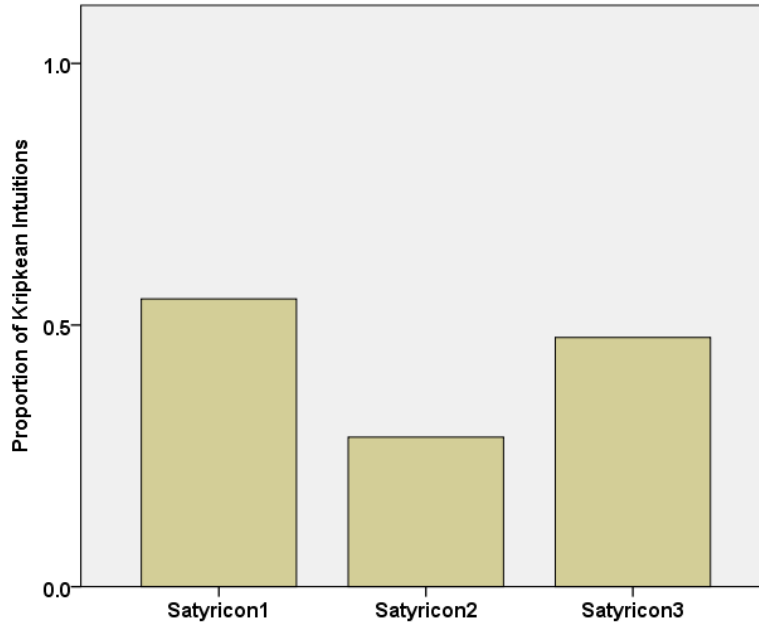


Figure 3. Proportions of Kripkean responses given to Satyricon1 (.55), Satyricon2 (.29), and Satyricon3 (.48) in Study 2a.

Participants were not strongly inclined to endorse the Kripkean response in any of the three conditions, but they were especially disinclined to do so when wrongdoing was involved. The difference in proportions of Kripkean responses was significant.¹³

In order to confirm the robustness of these results, we performed an online replication using the same materials with 180 workers (average age = 34, 56% female, 80% Anglo-American) from Amazon's Mechanical Turk (<https://www.mturk.com/>). The results confirm the initial finding that moral wrongdoing decreases Kripkean responses (cf. Figure 4).¹⁴

¹³ $\chi^2(2, N = 124) = 6.249, p < .05$, Cramér's $V = .22$ (small effect size).

¹⁴ The differences were again significant: $\chi^2(2, N = 180) = 12.057, p < .01$, Cramér's $V = .26$ (small effect size).

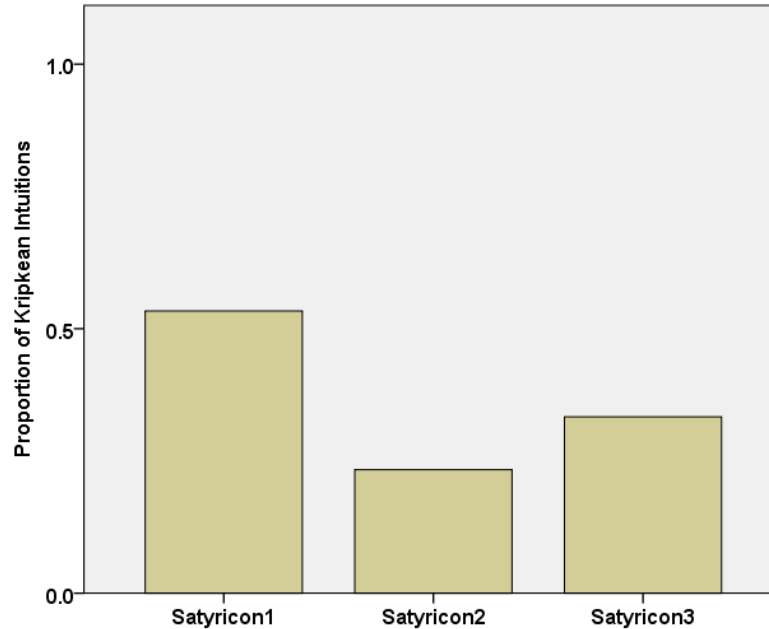


Figure 4. Proportions of Kripkean responses given to Satyricon1 (.53), Satyricon2 (.23), and Satyricon3 (.33) in the online replication of Study 2a.

In the vast literature on the Knobe effect in experimental philosophy, researchers have found that incorporating elements of wrongdoing often leads individuals to make judgments they would not otherwise have made. For example, when two agents have the same evidence, beliefs, and intentions but only one agent's action leads to harm, participants are significantly more likely to judge the author of the harmful act to have brought about the harm intentionally and to have known and believed that it would be brought about.¹⁵ A common type of explanation for these results is that feelings of blame distort participants' folk psychological attributions (e.g., Nadelhoffer 2006).

In a somewhat similar fashion, we do not believe that the differences observed in participants' responses in Study 2a accurately reflect their semantic competence. Rather, we believe that the interaction between the moral wrongdoing described and the fact that it was kept

¹⁵ Cf. Knobe (2010) and Alfano, Beebe, and Robinson (2012).

secret from the public combine to make John's ignorance of who Titus Petronius was more salient in *Satyricon*² than in the other two conditions. And we speculate that this increased salience leads participants to be more likely to think that John does not know who he is talking about and thus that he cannot be (or at least is not) talking about the jealous brother who murdered the author of *Satyricon*. Of course, in answering a question about whether John really knows who he is talking about, participants are answering a different question from the one about semantic reference that they are supposed to be answering. In order to test our explanation of these results, we constructed an additional study that focused participants' attention more directly on the correct question they should be considering.

5. Study 2b

The clarification we introduced into Study 2b was borrowed from the work of Justin Sytsma and Jonathan Livengood (2011, 319-320), who have recently argued that there is an important ambiguity in the perspective from which participants should understand Machery et al.'s Gödel case:

First, the question used in Machery et al.'s Gödel probe does not clearly indicate whether the (A) and (B) answer choices are to be read from the *narrator's epistemic perspective* (the narrator relaying information of which John is ignorant) or rather from *John's epistemic perspective* (as the speaker using the name 'Gödel').... While Machery et al. expect the descriptions to be read from the narrator's perspective, the question might plausibly lead participants to instead adopt John's perspective.... Specifically, from the narrator's point of view, 'the person who really discovered the incompleteness of arithmetic' denotes Schmidt and 'the person who got hold of the manuscript and claimed

credit for the work' denotes Gödel; but, from John's perspective 'the person who really discovered the incompleteness of arithmetic' denotes Gödel. Indeed, John has never heard of Schmidt!

In one experiment, Sytsma and Livengood presented participants with the following probe that clarified that the narrator's perspective should be adopted when thinking about Gödel1:

Clarified Narrator's Perspective: Having read the above story and accepting that it is true, when John uses the name 'Gödel,' would you take him to actually be talking about: (A) the person who (unbeknownst to John) really discovered the incompleteness of arithmetic? Or, (B) the person who is widely believed to have discovered the incompleteness of arithmetic, but actually got hold of the manuscript and claimed credit for the work?

Sytsma and Livengood found that a larger percentage of participants chose the Kripkean answer when confronted with the Clarified Narrator's Perspective probe than with the original probe. However, in [reference omitted for blind review], we found that Western participants were still more likely to give Kripkean responses than East Asians.

In Study 2b, we followed Sytsma and Livengood and constructed the following probe for our Satyricon cases:

Clarified Satyricon. Having read the above story and accepting that it is true, when John uses the name 'Titus Petronius,' who do you think he is actually talking about?

(A) The person who (unbeknownst to John) actually wrote Satyricon. Or

The (B) answer choices remained unchanged from Study 2a. 180 workers (average age = 32, 56% female, 79% Anglo-American) from Amazon's Mechanical Turk participated in Study 2b. Their responses are summarized in Figure 5.

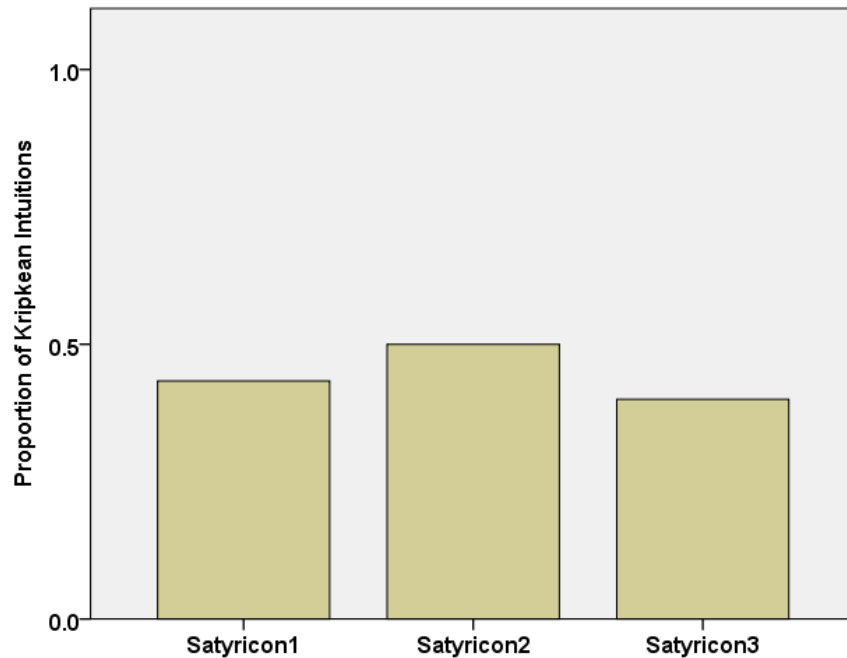


Figure 5. Proportions of Kripkean responses given to Satyricon1 (.43), Satyricon2 (.50), and Satyricon3 (.40) in Study 2b.

The proportions of Kripkean responses in the three conditions of Study 2b did not differ significantly from one another. This suggests that moral valence was able to affect participants' intuitions in Study 2a only because the task demands were specified in an insufficiently precise fashion. When participants' attention was focused more directly on the question of semantic reference, the effect disappeared. This confirms our suspicion that the effect of moral valence was not reflective of participants' semantic competence.

6. Conclusion

There are several things that we aimed to accomplish with our two studies. First, we sought to investigate whether cross-cultural and individual differences in semantic intuitions could be found with new experimental materials and, if so, whether these results would match previous findings. We also wanted to investigate the possibly distorting effects of moral valence on semantic intuitions, in light of the fact that Machery et al.'s original materials incorporated elements of wrongdoing but did not control for their influence. The fact that we did not find an effect of moral valence in Study 1 and did find such an effect in Study 2 only when the probe questions were insufficiently clear has two immediate implications. The first is that one alternative, deflationary explanation of the cross-cultural differences originally observed by Machery et al. (2004) has received some degree of disconfirmation. Because Machery et al. did not control for the effects moral valence, their results leave open the possibility that cross-cultural differences in sensitivity to moral violations—rather than stable differences in semantic intuitions—might be the cause of the differences they observed in participants' responses. The more alternative explanations of their data that are tested and found wanting, the more confidence we can place in the trustworthiness or reliability of their results. A second implication of Study 2 is a cautionary one. Because of the surprising power of moral valence to affect participants' responses to vignettes, researchers should take special care to control its influence. A final aim of our studies was to put additional data on the table concerning intra-cultural or individual differences in semantic intuitions, in an effort to enrich the more theoretical debate about the proper role of empirical evidence in philosophical theorizing.

During the last decade, experimental philosophers have raised important questions about what philosophers take themselves to be doing when they offer analyses of concepts like

knowledge, intentional action, and semantic reference. While philosophers typically view their vocation as being importantly distinct from that of the sciences, the most widely shared assumption throughout the history of analytic philosophy has been that they are providing analyses of “the ordinary notions” of knowledge, intentional action, etc. But this seems to imply that philosophical analyses are answerable in some way to how ordinary people reason with and apply these concepts. Analyses of knowledge that have denied the necessity of truth or justification (e.g., Hazlett 2010; Sartwell 1991, 1992) have been roundly rejected on the grounds that that is simply “not what we mean” when we call something ‘knowledge.’ We are not certain what the proper methodology is for the project of determining the semantic reference of proper names in a natural language. However, we firmly believe that being fully informed about the semantic intuitions of actual language users can inform and constrain such theorizing in important ways and have endeavored to make a contribution toward that end.

References

[Reference omitted for blind review]

Alfano, M., Beebe, J.R., and Robinson, B. 2012. The centrality of belief and reflection in Knobe effect cases: A unified account of the data. *The Monist*, 95, 264-89.

Deutsch, M. 2009. Experimental philosophy and the theory of reference. *Mind & Language*, 24, 445-66.

Gosling, S. D., Rentfrow, P. J., and Swann, W. B., Jr. 2003. A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37, 504-28.

- Hazlett, A. 2010. The myth of factive verbs. *Philosophy and Phenomenological Research* 80, 497-522.
- Knobe, J. 2010. Person as scientist, person as moralist. *Behavioral and Brain Sciences*, 33: 315-29.
- Kripke, S. 1972/1980. *Naming and Necessity*. Cambridge, MA: Harvard University Press.
- Lam, B. 2010. Are Cantonese-speakers really descriptivists? Revisiting cross-cultural semantics. *Cognition* 115, 320-29.
- Ludwig, K. 2007. The Epistemology of Thought Experiments: First Person versus Third Person Approaches. *Midwest Studies in Philosophy* 31, 128-59.
- Machery, E. 2012. Expertise and intuitions about reference. *Theoria* 27: 37-54.
- Machery, E., M. Deutsch, R. Mallon, S. Nichols, J. Sytsma, and S. Stich. 2010. Semantic intuitions: Reply to Lam. *Cognition* 117: 361-6.
- Machery, E., M. Deutsch, J. Sytsma. forthcoming. Speaker's reference and cross-cultural semantics.
- Machery, E., R. Mallon, S. Nichols, and S. Stich. 2004. Semantics, cross-cultural style. *Cognition*, 92, B1-B12.
- Machery, E., C. Y. Olivola, and M. de Blanc. 2009. Linguistic and metalinguistic intuitions in the philosophy of language. *Analysis*, 69, 689-94.
- Martí, G. 2009. Against semantic multi-culturalism. *Analysis* 69: 42-8.
- McCrae, R. R., Costa, P. T., Jr., and Yik, M. S. M. 1996. Universal aspects of Chinese personality structure. In M. H. Bond (ed.), *The Handbook of Chinese Psychology*. Hong Kong: Oxford University Press, pp. 189-207.

- McCrae, R. R., and Costa, P. T., Jr. 1997. Personality trait structure as a human universal. *American Psychologist*, 52, 509-16.
- McCrae, R. R., Terracciano, A., and 78 Members of the Personality Profiles of Cultures Project. 2005. Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology*, 88, 547-61.
- Nadelhoffer, T. 2006. Bad acts, blameworthy agents, and intentional actions: Some problems for jury impartiality. *Philosophical Explorations*, 9, 203-20.
- Reynolds, S. J. 2008. Moral attentiveness: who pays attention to the moral aspects of life? *Journal of Applied Psychology*, 93, 1027-41.
- Rolland, J.-P. 2002. The cross-cultural generalizability of the five-factor model of personality. In R. R. McCrae & J. Allik (eds), *The Five-Factor Model of Personality Across Cultures*. New York: Kluwer Academic/Plenum Publishers, pp. 7-28.
- Sartwell, C. 1991. Knowledge is merely true belief. *American Philosophical Quarterly*, 28, 157-65.
- Sartwell, C. 1992. Why knowledge is merely true belief. *Journal of Philosophy*, 89, 167-80.
- Sytsma, J., and J. Livengood. 2011. A new perspective concerning experiments on semantic intuitions. *Australasian Journal of Philosophy*. 89: 315-32.