

Semantics, Cross-Cultural Style

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Abstract

Theories of reference have been central to analytic philosophy, and two views, *the descriptivist view of reference* and *the causal-historical view of reference*, have dominated the field. In this research tradition, theories of reference are assessed by consulting one's intuitions about the reference of terms in hypothetical situations. However, recent work in cultural psychology (e.g., Nisbett et al. 2001) has shown systematic cognitive differences between East Asians and Westerners, and some work indicates that this extends to intuitions about philosophical cases (Weinberg et al. 2001). In light of these findings on cultural differences, an experiment was conducted which explored intuitions about reference in Westerners and East Asians. The experiment indicated that, for certain central cases, Westerners are more likely than East Asians to report intuitions that are consistent with the causal-historical view. These results constitute *prima facie* evidence that semantic intuitions vary from culture to culture, and the paper argues that this fact raises questions about the nature of the philosophical enterprise of developing a theory of reference.

Key words: semantic intuitions, proper names, reference, cultural differences, Kripke, descriptivism, causal-historical theory.

1. Introduction

Theories of meaning and reference have been at the heart of analytic philosophy since the beginning of the twentieth century. Two views, *the descriptivist view of reference* and *the causal-historical view of reference*, have dominated the field. The reference of names has been a key issue in this controversy. Despite numerous disagreements, philosophers agree that theories of reference for names have to be consistent with our *intuitions* regarding who or what the names refer to. Thus, the common wisdom in philosophy is that Kripke (1972/1980) has refuted the traditional descriptivist theories of reference by producing some famous stories which elicit intuitions that are inconsistent with these theories. In light of recent work in cultural psychology (Nisbett et al. 2001; Weinberg et al. 2001), we came to suspect that the intuitions that guide theorizing in this domain might well differ between members of East Asian and Western cultures. In this paper, we present evidence that probes closely modeled on Kripke's stories elicit significantly different responses from East Asians (Hong Kong undergraduates) and Westerners (American undergraduates), and we discuss the significance of this finding for the philosophical pursuit of a theory of reference.

1.1. Two Theories of Reference

Theories of reference purport to explain how terms pick out their referents. When we focus on proper names, two main positions have been developed, *the descriptivist view of reference* (e.g., Frege 1892, Searle 1958) and *the causal-historical view* associated with Kripke (1972/1980).

Two theses are common to all descriptivist accounts of the reference of proper names¹:

D1. Competent speakers associate a *description* with every proper name. This description specifies a set of properties.

D2. An object is the referent of a proper name if and only if it *uniquely or best satisfies* the description associated with it. An object uniquely satisfies a description when the description is true of it and only it. If no object entirely satisfies the description, many philosophers claim that the proper name refers to the unique individual that satisfies most of the description (Searle 1958, Lewis 1970). If the description is not satisfied at all or if many individuals satisfy it, the name does not refer.

The causal-historical view offers a strikingly different picture (Kripke 1972/1980)²:

¹ There are a variety of ways of developing description theoretic accounts (e.g., Frege 1892, Searle 1958, Lewis 1970, Loar 1976, Searle 1983, Jackson 1998, Garcia-Carpintero 2000).

² This picture has been refined in various ways (e.g., Devitt 1981, Salmon 1986, Devitt and Sterelny 1999, Soames 2001).

C1.A name is introduced into a linguistic community for the purpose of referring to an individual. It continues to refer to that individual as long as its uses are linked to the individual *via a causal chain* of successive users: every user of the name acquired it from another user, who acquired it in turn from someone else, and so on, up to the first user who introduced the name to refer to a specific individual.

C2.Speakers may associate descriptions with names. After a name is introduced, the associated description *does not play any role* in the fixation of the referent. The referent may *entirely* fail to satisfy the description.

1.2. *The Gödel Case and the Jonah Case*

There is widespread agreement among philosophers on the methodology for developing an adequate theory of reference. The project is to construct theories of reference that are consistent with our intuitions about the correct application of terms in fictional (and nonfictional) situations.³ Indeed, Kripke's masterstroke was to propose some cases that elicited widely shared intuitions that were inconsistent with traditional descriptivist theories. Moreover, it has turned out that almost all philosophers share the intuitions elicited by Kripke's fictional cases, including most of his opponents. Even contemporary descriptivists allow that these intuitions have falsified traditional forms of descriptivism and try to accommodate them within their own sophisticated descriptivist frameworks (e.g., Evans 1973, Jackson 1998).

To make all of this a bit clearer we present two of Kripke's central cases in greater detail and describe the corresponding descriptivist⁴ and causal-historical intuitions.

The Gödel Case (Kripke 1972/1980, 83-92)

Kripke imagines a case in which, because of some historical contingency, contemporary competent speakers associate with a proper name, "Gödel", a description that is entirely false of the original bearer of that name, person *a*. Instead, it is true of a different individual, person *b*. Descriptivism implies that the proper name refers to *b* because *b* satisfies the description. The descriptivist intuition is that someone who uses

³ Philosophers typically assume that speakers know (perhaps implicitly) how the reference of proper names is picked out. The intuitive judgments of the speakers are supposed somehow to reflect that knowledge (Kripke 1972, 42, 91, Segal 2001).

⁴ We use "descriptivism" to refer to the simple, traditional versions of descriptivism, and not to its recent, sophisticated elaborations. We call intuitions that are compatible with the causal-historical theory and incompatible with the traditional versions of descriptivism *Kripkean intuitions*. In contrast, we call those that are compatible with the traditional descriptivist theories and incompatible with the causal-historical theory *descriptivist intuitions*.

“Gödel” under these circumstances is speaking about *b*. According to the causal-historical view, however, the name refers to its original bearer, since contemporary speakers are historically related to him. The Kripkean intuition is that someone who uses “Gödel” under these circumstances is speaking about *a*. According to Kripke (and many other philosophers), our semantic intuitions support the causal-historical view:

Suppose that Gödel was not in fact the author of [Gödel’s] theorem. A man called ‘Schmidt’ (...) actually did the work in question. His friend Gödel somehow got hold of the manuscript and it was thereafter attributed to Gödel. On the [descriptivist] view in question, then, when our ordinary man uses the name ‘Gödel’, he really means to refer to Schmidt, because Schmidt is the unique person satisfying the description ‘the man who discovered the incompleteness of arithmetic’. (...) But it seems we are not. We simply are not. (83-84)

The Jonah Case (Kripke 1972/1980, 66-67)

Kripke imagines a case in which the description associated with a proper name, say “Jonah”, is not satisfied at all. According to descriptivism, “Jonah” would then fail to have a referent. The descriptivist intuition is that someone who uses the name under these circumstances isn’t speaking about any real individual.⁵ On the contrary, on the causal-historical view, satisfying the description is not necessary for being the referent of a name. The Kripkean intuition is that someone can use the name to speak about the name’s original bearer, whether or not the description is satisfied.⁶ Again, our intuitions are supposed to support the causal-historical view:

Suppose that someone says that no prophet ever was swallowed by a big fish or a whale. Does it follow, on that basis, that Jonah did not exist? There still seems to be the question whether the Biblical account is a legendary account of no person or a legendary account built on a real person. In the latter case, it’s only natural to say that, though Jonah did exist, no one did the things commonly related to him. (67)

1.3. Cultural variation in cognition and intuitions

Philosophers typically share the Kripkean intuitions and expect theories of reference to accommodate them. As we discuss more fully in section 3, we suspect that most philosophers exploring the nature of reference assume that the Kripkean intuitions are universal. For suppose that semantic intuitions exhibit systematic differences between

⁵ Or that the statement “Jonah exists” is false (given that the name has no referent).

⁶ Or that Jonah might have existed, whether or not the description is satisfied.

groups or individuals. This would raise questions about whose intuitions are going to count, putting in jeopardy philosophers' methodology.⁷

As researchers in history and anthropology have long maintained, one should be wary of simply assuming cultural universality without evidence. Recent work in cultural psychology has provided experimental results that underscore this cautionary note. In an important series of experiments, Richard Nisbett and his collaborators have found large and systematic differences between East Asians (EAs) and Westerners (Ws) on a number of basic cognitive processes including perception, attention and memory.⁸ These groups also differ in the way they go about describing, predicting and explaining events, in the way they categorize objects and in the way they revise beliefs in the face of new arguments and evidence (for reviews, see Nisbett et al. 2001 and Nisbett 2003). This burgeoning literature in cultural psychology suggests that culture plays a dramatic role in shaping human cognition. Inspired by this research program, Weinberg et al. (2001) constructed a variety of probes modeled on thought experiments from the philosophical literature in epistemology. These thought experiments were designed to elicit intuitions about the appropriate application of epistemic concepts. Weinberg et al. found that there do indeed seem to be systematic cross-cultural differences in epistemic intuitions. In light of these findings on epistemic intuitions, we were curious to see whether there might also be cross-cultural differences in intuitions about reference.

We lack the space to offer a detailed account of the differences uncovered by Nisbett and his colleagues. But it is important to review briefly some of the findings that led to the studies we will report here. According to Nisbett and his colleagues, the differences between EAs and Ws "can be loosely grouped together under the heading of holistic vs. analytic thought." Holistic thought, which predominates among East Asians, is characterized as "involving an orientation to the context or field as a whole, including attention to relationships between a focal object and the field, and a preference for explaining and predicting events on the basis of such relationships." Analytic thought, the prevailing pattern among Westerners, is characterized as "involving detachment of the object from its context, a tendency to focus on attributes of the object in order to assign it to categories, and a preference for using rules about the categories to explain and predict the object's behavior" (Nisbett et al. 2001, 293).

One range of findings is particularly significant for our project. The cross-cultural work indicates that EAs are more inclined than Ws to make categorical judgments on the basis of similarity; Ws, on the other hand, are more disposed to focus on causation in describing the world and classifying things (Norenzayan et al. 1999; Watanabe 1998 & 1999). This differential focus led us to hypothesize that there might be a related cross-cultural difference in semantic intuitions. For, on a description theory, the referent has to satisfy the description, but it need not be causally related to the use of the term. In contrast, on Kripke's causal-historical theory, the referent need not satisfy the associated

⁷A few philosophers have acknowledged the possibility that there is variation in semantic intuitions (e.g., Dupré 1993, Stich 1990, 1996), but this possibility has not previously been investigated empirically.

⁸ The East Asian participants were Chinese, Japanese, and Korean.

description. Rather, it need only figure in the causal history (and in the causal explanation of) the speaker's current use of the word.

Given that Ws are more likely than EAs to make causation-based judgments, we predicted that when presented with Kripke-style thought experiments, *Westerners would be more likely to respond in accordance with causal-historical accounts of reference*, while *East Asians would be more likely to respond in accordance with descriptivist accounts of reference*.⁹ To test this hypothesis, we assembled a range of intuition probes to explore whether such differences might be revealed. The probes were designed to parallel the Jonah case and the Gödel case.

2. Experiment

Method

Participants

40 undergraduates at Rutgers University and 42 undergraduates from the University of Hong Kong participated. The University of Hong Kong is an English speaking university in Hong Kong, and the participants were all fluent speakers of English. A standard demographics instrument was used to determine whether participants were Western or Chinese. Using this instrument, nine non-Western participants were excluded from the Rutgers sample, leaving a total of 31 Western participants from Rutgers (18 females; 13 males). One non-Chinese participant was excluded from the Hong Kong sample, leaving a total of 41 Chinese participants from Hong Kong (25 females; 16 males). One additional Hong Kong participant was excluded for failure to answer the demographic questions.

Materials and Procedure

In a classroom setting, participants were presented with 4 probes counterbalanced for order. The probes were presented in English both in the USA and in Hong-Kong. Two were modeled on Kripke's Gödel case, and two were modeled on Kripke's Jonah case. One probe modeled on Kripke's Gödel case and one probe modeled on Kripke's Jonah case used names and situations that were familiar to the Chinese participants. One of the Gödel probes was closely modeled on Kripke's own example (see appendix for the other probes):

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

⁹ There is a common concern that the labels 'East Asian' and 'Western' are too rough to do justice to the enormous diversity of cultural groups such labels encompass. We are sympathetic to this concern. However, the crudeness of these groupings does nothing to undermine the experiment we present. On the contrary, if we find significant results using crude cultural groupings, there is reason to believe more nuanced classifications should yield even stronger results.

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?

Results and Discussion

Scoring

The scoring procedure was straightforward. Each question was scored binomially. An answer consonant with causal-historical accounts of reference (B) was given a score of 1, the other answer (A) was given a score of 0. The scores were then summed, so the cumulative score could range from 0 to 2. Means and standard deviation for summary scores are shown in table 1.

| | Score (SD) |
|----------------------|------------|
| Gödel cases | |
| Western participants | 1.13 (.88) |
| Chinese participants | .63 (.84) |
| Jonah cases | |
| Western participants | 1.23 (.96) |
| Chinese participants | 1.32 (.76) |

Table 1. Mean scores for experiment 1 (SD in parentheses)

An independent samples *t*-test yielded a significant difference between Chinese and Western participants on the Gödel cases ($t(70) = -2.55, p < .05$) (all tests two-tailed). The westerners were more likely than the Chinese to give causal-historical responses.

However, in the Jonah cases, there was no significant difference between Chinese and Western participants ($t(69) = .486$, n.s.). In light of the dichotomous nature of the underlying distributions, we also analyzed each Gödel case non-parametrically, and the results were largely the same. Western participants were more likely than Chinese participants to give causal-historical responses on both the Tsu Ch'ung Chih probe ($\chi^2(1, N=72) = 3.886, p < .05$) and on the Gödel probe ($\chi^2(1, N=72) = 6.023, p < .05$).¹⁰

Thus we found that probes modeled on Kripke's Gödel case (including one that used Kripke's own words) elicit culturally variable intuitions. As we had predicted, Chinese participants tended to have descriptivist intuitions, while Westerners tended to have Kripkean ones. However, our prediction that the Westerners would be more likely than the Chinese to give causal-historical responses on the Jonah cases was not confirmed. There are a number of possible explanations for this. Setting out the Jonah cases precisely requires a lengthy presentation (see appendix), so it's possible that our probes were simply too long and complex to generate interpretable data. Another, more interesting possibility hinges on the fact that in the Jonah cases, the descriptivist response is that the speaker's term fails to refer. It might be that for pragmatic reasons, both the Westerners and the Chinese reject the uncharitable interpretation that the speaker is not talking about anyone.

3. The End of the Innocence

Our central prediction was that, given Westerners' greater tendency to make causation-based judgments, they would be more likely than the Chinese to have intuitions that fall in line with causal-historical accounts of reference. This prediction was borne out in our experiment. We found the predicted systematic cultural differences on one of the best known thought experiments in recent philosophy of language, Kripke's Gödel case. However, we have no illusions that our experiment is the final empirical word on the issue. Rather, our findings raise a number of salient questions for future research. For instance, we predicted that the Westerners would be more likely than the Chinese to have Kripkean intuitions *because they are more likely to make causation-based judgments*. Although our results are consistent with this hypothesis, they fail to support it directly. For they do not establish unequivocally that the cultural difference results from a different emphasis on causation. In future work, it will be important to manipulate this variable more directly. Further, our experiment does not rule out various pragmatic explanations of the findings. Although we found the effect on multiple different versions of the Gödel case, the test question was very similar in all the cases. Perhaps the test question we used triggered different interpretations of the question in the two different

¹⁰ It's worth noting that this result replicated an earlier pilot study in which we used two different cases modeled on Kripke's Gödel case. In the pilot study, we found that Western participants (at the College of Charleston, $N=19$, $M=1.42$, $SD=.77$) were more likely than Chinese participants (at Hong Kong University, $N=32$, $M=.65$, $SD=.75$) to give causal-historical responses ($t(43) = -3.366, p < .01$, two-tailed). The results of the pilot study were also significant when analyzed nonparametrically.

groups. In addition, our focus in this paper has been on intuitions about proper names, since proper names have been at the center of debates about semantics. However, it will be important to examine whether intuitions about the reference of other sorts of terms, for example natural kind terms (see, e.g., Putnam 1975), also exhibit systematic cross-cultural differences. We hope that future work will begin to address these questions.

Although there are many empirical questions left open by the experiment reported here, we think that the experiment already points to significant philosophical conclusions. As we noted above, we suspect that philosophers employing these thought experiments take their own intuitions regarding the referents of terms, and those of their philosophical colleagues, to be universal. But our cases were modeled on one of the most influential thought experiments in the philosophy of reference, and we elicited culturally variable intuitions. Thus, the evidence suggests that it is wrong for philosophers to assume a priori the universality of their own semantic intuitions. Indeed, the variation might be even more dramatic than we have suggested. While our focus has been on cultural differences, the data also reveal considerable intra-cultural variation. The high standard deviations in our experiment indicates that there is a great deal of variation in the semantic intuitions within both the Chinese and Western 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.

Perhaps, however, philosophers do not assume the universality of semantic intuitions. In that case, philosophers of language need to clarify their project. One possibility is that philosophers of language would claim to have no interest in unschooled, folk semantic intuitions, including the differing intuitions of various cultural groups. These philosophers might maintain that, since they aim to find the *correct* theory of reference for proper names, only *reflective* intuitions, i.e., intuitions that are informed by a cautious examination of the philosophical significance of the probes, are to be taken into consideration.

We find it *wildly* implausible that the semantic intuitions of the narrow cross-section of humanity who are Western academic philosophers are a more reliable indicator of the correct theory of reference (if there is such a thing, see Stich 1996, Ch. 1) than the differing semantic intuitions of other cultural or linguistic groups. Indeed, given the intense training and selection that undergraduate and graduate students in philosophy have to go through, there is good reason to suspect that the alleged *reflective* intuitions may be *reinforced* intuitions. In the absence of a principled argument about why philosophers' intuitions are superior, this project smacks of narcissism in the extreme.

A more charitable interpretation of the work of philosophers of language is that it is a proto-scientific project modeled on the Chomskyan tradition in linguistics. Such a project would employ intuitions about reference to develop an empirically adequate account of the implicit theory that underlies ordinary uses of names. If this is the correct interpretation of the philosophical interest in the theory of reference, then our data are especially surprising, for there is little hint in philosophical discussions that names might work in different ways in different dialects of the same language or in different cultural

groups who speak the same language. So, on this interpretation, our data indicate that philosophers must radically revise their methodology. Since the intuitions philosophers pronounce from their armchairs are likely to be a product of their own culture and their academic training, in order to determine the implicit theories that underlie the use of names across cultures, philosophers need to get out of their armchairs. And this is far from what philosophers have been doing for the last several decades.

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References:

- Burge, T. (1973). Reference and proper names. *The Journal of Philosophy*, 70, 425-439. Reprinted in P. Ludlow, ed., 1997.
- Devitt, M. (1981). *Designation*, New York: Columbia UP.
- Devitt, M., & Sterelny, K. (1999). *Language and reality: An introduction to the Philosophy of Language*, Second edition, Cambridge, MA: MIT Press.
- Dupré, J. (1993). *The Disorder of Things: Metaphysical Foundations of the Disunity of Science*, Cambridge, MA: Harvard UP.
- Evans, G. (1973). The Causal Theory of Names. *Proceedings of the Aristotelian Society*, Supp. 47, 187-208. Reprinted in G. Evans, 1985, *Collected Papers*, Oxford: OUP, and P. Ludlow, ed., 1997.
- Frege, G. (1892/1948). On sense and Reference. Translated by M. Black. *The Philosophical Review*, 207-230. Reprinted in P. Ludlow, ed., 1997.
- Garcia-Carpintero, M. (2000). A Presuppositional Account of Reference Fixing. *The Journal of Philosophy*, 97, 3, 109-147.
- Geurts, B. (1997). Good news about the description theory of names. *Journal of Semantics*, 14, 319-348.
- Jackson, F. (1998). Reference and Description Revisited. *Philosophical Perspectives*, 12, *Language, Mind, and Ontology*, 201-218.
- Kripke, S. (1972/1980). *Naming and Necessity*, Cambridge, MA: Harvard UP.
- Lewis, D. (1970). How to Define Theoretical Terms. *The Journal of Philosophy*, 67, 427-446.
- Loar, B. (1976). The semantics of singular terms. *Philosophical Studies*, 30, 353-377.

- Longobardi, G. (1994). Reference and proper names : A theory of N-movement in syntax and logical form. *Linguistic Inquiry*, 25, 4, 609-665.
- Ludlow, P. (ed.). (1997). *Readings in the philosophy of language*, Cambridge, MA: MIT Press.
- McDowell, J. (1977). The sense and reference of a proper name. *Mind*, 86, 159-189.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic vs. analytic cognition. *Psychological Review*, 108, 291-310.
- Nisbett, R. E. (2003). *The geography of thought: How Asians and Westerners think differently ... and why*, New York, Free Press.
- Norenzayan, A., Smith, E., & Kim, B., 2002. Cultural Preferences for Formal versus Intuitive Reasoning. *Cognitive Science*, 26, 653-684.
- Putnam, H. (1975), The Meaning of "Meaning". Reprinted in H. Putnam, 1975, *Philosophical papers: Vol. 2, Mind, language, and reality*, New York: CUP.
- Recanati, F. (1993). *Direct reference, From language to thought*, Oxford: Blackwell.
- Salmon, N. (1986). *Frege's puzzle*, Cambridge, MA: MIT Press.
- Searle, J. (1958). Proper Names. *Mind*, 67, 166-173. Reprinted in P. Ludlow, ed., 1997.
- Searle, J. (1983). *Intentionality : An Essay in the philosophy of mind*, Cambridge: CUP.
- Segal, G. (2001). Two Theories of Names. *Mind and Language*, 16, 5, 547-563.
- Soames, S. (2001). *Beyond necessity: The unfinished semantic agenda of Naming and Necessity*, New York: OUP.
- Stich, S. (1990). *The Fragmentation of reason*, Cambridge, MA: MIT Press.
- Stich, S. (1996). *Deconstructing the mind*, Oxford: OUP.
- Strawson, P. (1950). On referring. *Mind*, 59, 320-344.
- Watanabe, M. (1998). Styles of reasoning in Japan and the United States: Logic of Education in two cultures. Paper presented at the American Sociological Association Annual Meeting, San Francisco, August, 1998.
- Watanabe, M. (1999). *Styles of reasoning in Japan and the United States: Logic of education in two cultures*. Unpublished Ph.D. thesis, Columbia University.
- Weinberg, J., Nichols, S., & Stich, S. (2001). Normativity and Epistemic Intuitions. *Philosophical Topics*, 29, 1&2, 429-459.

Appendix:

Gödel-case:

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?

Jonah-cases:

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 8th 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 8th 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.

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 11th 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 Ghangzhou, 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 14th 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 12th century, “Chung Wai Man” in the 13th, and finally by “Chan Wai Man”. The story about the adventurous life of Chan Wai Man was written down in the 15th 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.