Cultural differences in the interpretation of verb phrases

Overview

According to more than a century of claims in linguistics, anthropology, and psychology, Westerners tend to think more abstractly than East Asians (Nisbett, Peng, Choi, & Norenzayan, 2001). Here we challenge this generalization through studies in more than 2000 Chinese and US participants who completed a validated measure of abstract thought (Vallacher & Wegner, 1989). Given the same verb phrases, Chinese individuals construed the described events more abstractly than US participants, no matter whether the phrases were presented in Chinese or English, demonstrating a greater propensity for abstract thinking about events.

Background and rationale

How do minds differ across cultures? More than a century ago, this question generated controversy when Western scholars claimed that some non-Westerners were incapable of abstract thought. For example, the anthropologist Alfred Wallace wrote that, "savage languages...contain no words for abstract conceptions," and that non-Westerners were trapped in a concrete world, unable "to reason on any general subject that does not immediately appeal to [the] senses" (Wallace, 1870, pg. 340).

The question of cross-cultural differences in abstract thought has arisen again in the 21st century. In a landmark paper Nisbett and colleagues (2001) suggested that Westerners, who inherited a tradition of formal logic from the Ancient Greeks, "should be more capable of...reasoning based on logical rules" than East Asians (see also Norenzayan, et al., 2002). This proposal echoes earlier assertions, for example, that traditional Chinese thinking is "indifferent to abstraction" (Moser, 1996, pg. 7) and that the Chinese language is "an unsuitable vehicle for abstract ideas" (ibid, pg. 6). In short, according to an influential position in cultural psychology East Asians, and Chinese people in particular, are culturally and linguistically limited in their capacity (or, at a minimum, their propensity) for abstract thought.

Our research calls into question the assumption that East Asians think less abstractly than Westerners. Previously, we reevaluated several decades of experiments that establish cognitive differences between these groups. Overall, we concluded that East Asians appear to be *more likely* than Westerners to engage in several varieties of abstract thought, including relational thinking (attending to abstract relations rather than the concrete objects being related) and holistic perception (seeing a gestalt whole rather than the constituent parts), consistent with the well-documented propensity for members of 'collectivistic' cultures to conceptualize objects and events as embedded in physical and social contexts (Singh, Wang, & Casasanto, 2019).

Here, we tested for cross-cultural differences between Chinese and US individuals (N = 2103) in a validated measure of concrete vs. abstract thinking, the Behavior Identification Form (BIF; Vallacher & Wegner, 1989). The BIF is a list of 25 different verb phrases that describe everyday actions or events (e.g., *locking a door*). Each phrase is glossed at two levels of an action hierarchy: a "high-level" gloss at the level of the action's abstract goals or outcomes (e.g., *securing the house*) and a "low-level" gloss at the level of the action's concrete mechanical details (e.g., *putting a key in the lock*). For each verb phrase, participants were asked to choose the gloss that best described the action. If Westerners tend to think more abstractly than East Asians, as suggested by a tradition of Western scholarship extending into the 21st century, then the US participants should be more likely to choose abstract action construals compared to the Chinese participants, who should have a greater "concern for concrete objects and events" (Nisbett et al., 2001, pg. 306). Alternatively, if East Asians tend to think more abstractly than Westerners, as suggested by our re-evaluation of some canonical findings in cultural psychology (Singh, et al., 2019), then Chinese participants should be more likely than Westerners to choose abstract interpretations of the verb phrases.

Study 1. We administered the BIF to 6 independent national online samples (total N = 1,797) of Chinese participants in China (in Mandarin; n = 996) and Caucasian participants in the US (in

English; n = 801). Chinese participants interpreted the verb phrases abstractly significantly more often than US participants, in each pair of samples analyzed separately and in the combined samples (p = 6.69 x 10^{-4}; fig. 1). This difference remained highly significant when hypothesis-irrelevant factors such as gender, education, and age were controlled.

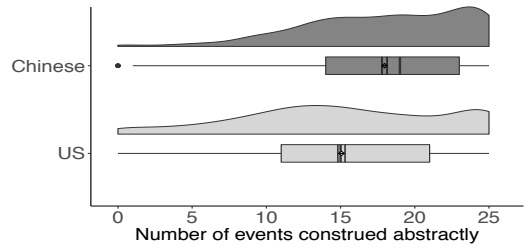

Figure 1. Chinese participants interpreted verb phrases abstractly more often than Caucasian Americans. Diamonds show the means, with SEM error bars. Bold lines show the medians; shaded regions show a smoothed histogram of responses.

Study 2. We tested whether Chinese people living in the US (N = 305) interpret verb phrases more concretely than Chinese people living in China, and also ruled out the possibility that the cross-group differences in Study 1 were driven by unintended differences between the Mandarin and English versions of the BIF. Chinese people living in the US completed either the Mandarin version (n = 166) or the English version (n = 139) of the BIF. Participants chose the concrete interpretations significantly more often than Chinese people tested in China (from Study 1; p = 0.004), and their BIF scores were statistically indistinguishable from US participants' (p = 0.931; Fig. 2, left). Results did not differ significantly between the Mandarin and English BIFs (p = *0.787)*. Furthermore, time spent in the US predicted an increase in concrete BIF responses. Although they are correlational, these results suggest time in the US affects how abstractly Chinese people interpret verb phrases – even when they are tested in their native language.

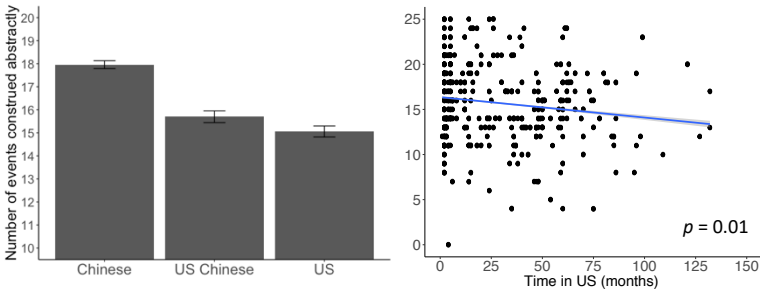

Figure 2. *Left: Chinese participants in the US interpreted verb phrases concretely more often than Chinese participants in China; they did not differ significantly from US Caucasians. Right: Chinese participants who lived in the US longer responded concretely more often. Shaded region shows SEM.*

Together, these results challenge the long-standing generalization that Westerners have a greater propensity for abstract thought than East Asians. On the contrary, when asked to interpret the meanings of verb phrases, Chinese people tend to think more abstractly than US Caucasians, apparently becoming more *concrete* thinkers when exposed to US culture.

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