High-level construal mindset promotes categorizing information based on thematic relations

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Abstract

The present study examined whether a high-level construal mindset promotes categorizing information according to thematic relations. In two experiments, the construal-level priming task was used to initiate a high-level versus low-level construal mindset, and then all participants were asked to complete the triad task which is the task of measuring the preference to classify. The research findings demonstrated that irrespective of whether the objects being classified were artifacts (Experiment 1) or natural objects (Experiment 2), the high-level construal mindset group exhibited a higher percentage of thematic responses in the triad task. The findings suggest that a

high-level construal mindset promotes categorizing information based on thematic relations.

***Keywords*:** Categorization, Level of construal, High-level construal mindset, Thematic relations

Statements and Declarations

Conflict of Interest

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Research Involving Human Participants

The study was conducted after obtaining Institutional Review Board approval from the Department of Psychology at Northwest Normal University. We received the written consent of all participants before testing began. All procedures performed in studies involving human participants were by the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Consent to participate

Informed consent was obtained from all individual participants included in the study.

Consent for publication

All participants signed informed consent regarding publishing their data.

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Code availability

Not applicable.

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Abstract

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Keywords: Categorization, Level of construal, High-level construal mindset, Thematic relations

Categorizing our understanding of the world into beneficial classifications is a fundamental process in the brain. Categories represent groups or classes of items or entities that share similarities or meaningful connections (Lawson, Chang, & Wills, 2017). The organization of stored semantic knowledge for concrete object categories is based on two types of relations: taxonomic and thematic (Lawson et al., 2017). Thematic relations are complementary relations between objects that co-occur or interact in space and time (Mirman, Landrigan, & Britt, 2017). Taxonomic relationships entail membership in a common category based on shared features (Mirman et al., 2017). Categorizing information using thematic relations necessitates concentrating on the complementary functions or roles of entities, thereby integrating them within a shared scenario or event (Estes et al., 2011; Li, Shi, Wei, & Xia, 2023). For instance, the objects "cow" and "milk" exhibit a thematic relationship through a production theme, as cows serve as producers, and their milk is the resulting product, with each object performing complementary thematic roles. However, categorizing information using taxonomic relations requires directing attention toward the shared detailed characteristics of entities, thereby grouping them within the same category (Li, Guo, Shi, Sun, & Wang, 2022; Mirman et al., 2017). For instance, "whales" and "horses" possess significant shared characteristics, such as being warm-blooded and giving birth to live offspring, thus placing them within the category of "mammals." Similarly, "pizza" and "chips" both belong to the "food" category as they share the property of being edible.

Studies have provided evidence that categorizing information according to thematic or taxonomic relationships has distinctly different effects on cognitive processing in individuals. Research has demonstrated that categorizing information based on thematic relations enhances subjectively perceived similarity (Mman & Graziano, 2012b), the organization, and encoding of experiential knowledge in memory representations (Borghi & Caramelli, 2003), as well as the comprehension of both local content (words) and overall content (paragraph sketches) in textual stories (Jones & Estes, 2012). Additionally, this cognitive process influences linguistic intuitive coherence judgments (Maldei, Baumann, & Koole, 2020) and specific reasoning processes, such as analogical reasoning (Doumas, Hummel, & Sandhofer, 2008). In contrast, categorizing information based on category relationships enhances individuals' memory for conceptual knowledge (Estes et al., 2011), the perception of novelty between the brand and the extension product (De Groote, Mendini, & Gibbert, 2019), and the generalization of fear emotions (Lei, Mei, Dai, & Peng, 2020).

Studies have shown that various factors influence individuals' preferences for categorizing information based on thematic or taxonomic relations. Research has shown that generating solutions to distant analogies promotes categorizing information based on thematic relations (Li et al., 2023). In this study, Li et al. initially assigned one group to solve distant analogies, while the other group tackled near analogies. Following the completion of their respective analogies, both groups were then tasked with completing the Triad task. In the

Triad task, Participants were given sets of triads consisting of a base item (such as a dog) and two comparison items. They had to decide whether an item that was thematically (such as a bone) or taxonomically alike (such as a cat) should be placed in the same category as the underlying item. The experimental results showed that the group that solved distant analogies demonstrated more thematic responses in the Triad task than the group that solved near analogies. Furthermore, prior research has highlighted that several factors, including global-local processing, knowledge, and educational background, thought patterns, age, and the level of abstractness in the material, could also contribute to shaping individuals' bias in categorizing information according to either thematic or taxonomic relations. According to previous research, initiating global rather than local processing causes individuals to organize information according to thematic relationships (Guest et al., 2016). Li et al. observed that unconscious thinking tends to categorize information based on thematic relations (Li, Guo, Shi, Sun, & Wang, 2022). In sorting and induction tasks involving marine creatures, Shafto et al. found that commercial fishermen (experts) were more influenced by thematic constraints, such as commercial and ecological factors, whereas university undergraduates (novices) were primarily influenced by taxonomic constraints, such as visual features (Shafto & Coley, 2003). Li et al. discovered that bilingual participants made more thematically related responses than taxonomically related responses in their first language but equally frequent thematic and taxonomic responses in their second language (Li, Zhang, & Wang, 2011). Berger et al. found

that adults tend to categorize information based on thematic relations, while children and the elderly rely more on taxonomic relations (Berger & Donnadieu, 2006; Mman & Graziano, 2012b). Papagno et al. observed that categorizing concrete concepts seemingly relies on taxonomic relations, whereas categorizing abstract concepts relies on thematic relations (Papagno, Martello, & Mattavelli, 2013).

Among the several factors mentioned above, both global processing and abstract concepts seem to be closely related to a high-level construal mindset (abstract processing) (e.g., Darwent, Fujita, & Wakslak, 2010; Papagno, Martello, & Mattavelli. 2013). Darwent et al. (2010) found that when global processing is initiated at the perceptual level, abstract and superordinate concepts in the semantic network are activated, and people tend to integrate new information into existing knowledge structures. Papagno et al. (2013) found that, when organizing and categorizing abstract concepts, people try to integrate them into a higher level of abstraction. However, to date, no studies have directly explored whether levels of construal, especially a high-level construal mindset, affect the classification preference of individuals.

Construal level theory (CLT; Trope & Liberman, 2010) posits that individuals can perceive or "construe" stimuli at a high or low level. A high-level construal mindset involves the creation of abstract mental representations that extract the essential core characteristics of an item and emphasize its global perceptual elements. By contrast, a low-level construal mindset concentrates on rich and specific details that highlight the perceptual features of an

item. Research has shown that high construal levels facilitate information aggregation (Hadar, Glickman, Trope, Liberman & Usher, 2022). In this study, all participants were instructed to complete a construal-level priming manipulation task. One group of participants, referred to as the high-level construal group, received instructions to contemplate the "why" aspect of engaging in a specific activity, such as "Why maintain good physical health?" The other group of participants, known as the low-level construal group, was instructed to consider the "how" aspect of performing the same activity, for example, "How to maintain good physical health." All participants completed a numerical averaging task. The research findings revealed that the induction of a high-level construal mindset improved aggregation accuracy compared with a low-level construal mindset. Numerous studies have investigated how construal levels affect cognitive processing across disciplines. Studies have demonstrated that when compared to a low-level construal mindset, a high-level construal mindset has been found to confer benefits in areas such as self-control, recognition of human faces, creative processing, mitigation of retrieval-induced forgetting, facilitation of goal-consistent evaluations, influence on emotional preferences, reduction of over-optimistic predictions, cross-sensory effects of visual information on taste perception, and augmentation of moral concern (Fujita, Trope, Liberman & Levin-Sagi, 2006; Yan, Hou & Unger, 2014; Hansen, 2019; Agerström & Björklund, 2013; Wyer, Hollins, Pahl & Roper, 2015; Zhbanova & Rule, 2014; Ikeda, Hattori & Kobayashi, 2016; Rees, Fujita, Han, Sherman & Sklar, 2018; Schwartz, Eyal & Tamir, 2018). A question

then arises as to whether a high-level construal mindset promotes the categorization of information according to thematic relations.

While categorizing information based on taxonomic relations involves identifying common and detailed characteristics, categorizing information based on thematic relations emphasizes discovering the overall connections among objects (Guest et al., 2016; Maldei, Baumann, & Koole, 2020). Previous studies have indicated that a high-level construal mindset promotes holistic and integrative thinking (Liberman & Förster, 2009; Smith & Trope, 2006). Smith et al. (2006) found that increasing psychological distance by assuming a high-power position caused individuals to tend towards perceiving the global structure to extract the gist. Liberman et al. (2009) found that thinking about a more distant future, spatial location, or social relationship enhanced individuals' ability to recognize the Navon global letters faster. Additionally, previous studies have indicated that a high-level construal mindset enhances relational processing (e.g., Ikeda et al., 2016). Ikeda et al. (2016) found that a high-level construal mindset can reduce retrieval-induced forgetting by promoting relational processing. Based on these findings, this study hypothesizes that a high-level construal mindset promotes the categorization of information according to thematic relations.

In the current study, we used the construal-level priming manipulation task developed by Freitas et al. (2004) to manipulate high-level versus low-level construal mindset via the "why/how" mindset manipulation. After the construal-level priming manipulation task,

participants are required to complete the Triad task (e.g., Li et al ., 2023; Lin et al., 2001). If a high-level construal mindset promotes the categorization of information based on thematic relations, it is anticipated that the proportion of thematic responses within the high-level construal mindset group should be higher in the Triad task, regardless of whether the object being classified is natural (Experiment 2) or artificial (Experiment 1).

Experiment 1

Methods

Participants and design

We determined the sample size based on effect sizes from related research. For example, Markowitz (2010, Exp. 1) reported an effect size of $f = 0.34$ (equivalent to $d = 0.78$), and Maldei et al. (2020, Study 1) found an effect size of $f = 0.28$ (equivalent to $d = 0.56$). By averaging these effect sizes ($d = 0.67$) and aiming for a power of 0.80 with an alpha level of $\alpha = 0.05$ using G*Power (Faul et al., 2009), the calculated total sample size was 72, indicating a minimum of 36 participants per experimental condition. In pursuit of higher power, we recruited 131 undergraduate students for the study (63 male and 68 female, mean age = 21.55 years, $SD = 1.11$ years). Among them, 66 participants (32 males and 34 females) were allocated to the high-level construal mindset group, while 65 participants (31 males and 34 females) were assigned to the low-level construal mindset group. All participants will receive

corresponding course credits.

The study employed a between-subjects single-factor design, with thinking type (high-level construal mindset or low-level construal mindset) serving as the between-subject variable. The dependent variable's measurement index is the proportion of the participants' theme-related responses in the triad task. A higher proportion indicates a greater inclination of participants to categorize information based on thematic relationships.

Materials and procedure

We first asked both groups of participants to complete the construal-level priming task developed by Freitas et al., (2004). In the high-level construal mindset group, participants were provided with four boxes containing consecutive "why" questions. They answered these questions, starting with queries like "Why maintain good physical health?" and then referred to their responses. Conversely, in the low-level construal mindset group, participants responded to four consecutive "how" questions, beginning with the same behavior. For instance, they answered questions like "How to maintain good physical health" and subsequently referred to their answers (see Fig. 1).

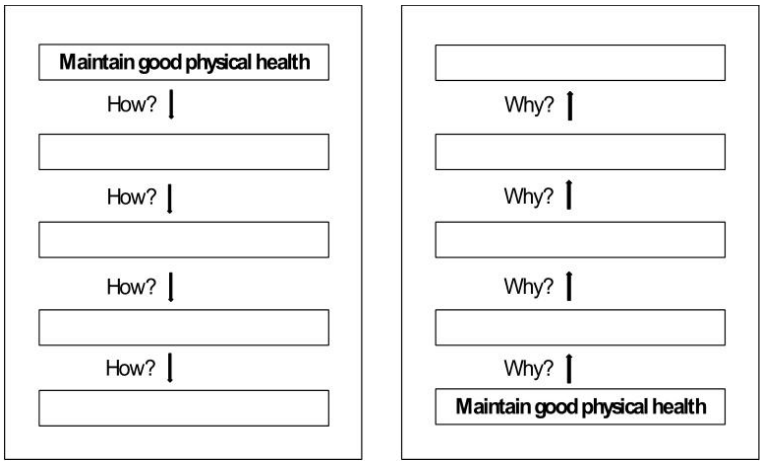

Fig 1. Mindset induction manipulation: Participants complete the high-level construal mindset manipulation (“ why ? ”) or the low-level construal mindset manipulation (“ how ? ”).

After completing the construal-level priming task, all participants were asked to complete the Behavioral Identification Form (BIF, Vallacher & Wegner, 1989). The BIF is a widely adopted measure of construal level (Hansen & Trope, 2013; Shaeffer, Libby, & Eibach, 2015). On this form, participants were presented with 25 target behaviors that they could redescribe in either the narrow, discrete terms or the global, superordinate terms. Once participants described the target behavior abstractly, they would receive a score of 1, and the opposite would be scored as 0. A higher score out of 25 indicated a greater tendency towards abstract construal.

Finally, after completing the Behavioral Identification Form, we instructed all participants to complete the triad task, which has been used in previous studies by Guest et al. (2016) and Lin et al. (2001) and utilized the same stimuli (The full list of stimuli is in

Appendix A). To ensure the cross-cultural validity of the experiment, we adopted the research methodology suggested by Ember et al. (2001) and undertook the translation and back-translation process of the word material to create the Chinese version employed in the experiment. During this task, a series of items were sequentially presented on a computer screen, with the order of presentation randomly generated by the computer. Each item in the task consisted of a benchmark word, such as "lamp," along with two comparative words. One of the comparative words was taxonomically related to the base word, such as "flashlight," indicating that both the flashlight and the lamp shared attribute characteristics of luminous lighting. The other comparative word was thematically related to the base word, such as "desk," indicating that the desk and the lamp played a complementary role in a thematic scene associated with "learning" or "handling official business."(see Fig. 2). Participants were instructed to determine which comparative word should be grouped with the benchmark word. The proportion of choosing thematically related comparative words made by the participants served as the measure of the participants' classification tendency. Half of the thematically related words were presented on the left side of the item, while the other half were presented on the right side.

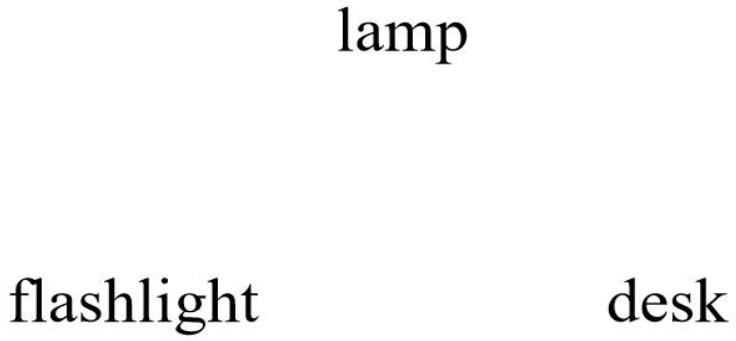

Fig 2. The example of the triad items.

Results and discussion

Firstly, the manipulation check revealed that the manipulation of construal level was successful. Participants who belong to the high-level mindset group (M = 17.88, SD = 2.34) chose a higher proportion of high-level alternatives in the Behavioral Identification Form (BIF) than the low-level mindset group (M = 13.17, SD = 2.71), t (129) = 10.66, $p < 0.001$, Cohen's d = 1.86, 95% CI [3.836; 5.583], $BF_{10} = 1.76\times10^{16}$ in favor of an effect (Default prior).

Subsequently, we conducted a correlation analysis to explore the relationship between the scores of two groups of participants on the Behavioral Identification Form (BIF) and their proportion of theme-related responses in the triad task. The results unveiled a significant positive correlation between the scores on the BIF and the proportion of theme-related responses in the triad task, $r(131) = 0.44$, $p < 0.001$, $BF_{10} = 10.98\times10^{4}$,

favoring an effect (Default prior). Furthermore, additional regression analysis demonstrated that scores on the BIF significantly and positively predicted the proportion of theme-related responses in the triad task, $\beta = 0.44$, $t(131) = 5.60$, $p < 0.01$, $BF_{10} = 9.71\times10^{4}$, favoring an effect (Default prior).

Finally, we calculated the percentage of thematic responses in the high-level mindset and low-level mindset groups (see Fig. 3). Then, using the Independent sample t-test, it was found that the percentage of thematic responses of students with the high-level mindset group ($M = 0.70$, $SD = 0.17$) was significantly higher than that of students with the low-level mindset group ($M = 0.46$, $SD = 0.17$), t (129) = 8.20, $p < 0.001$, Cohen's $d = 1.43$, 95% CI [0.184; 0.301], $BF_{10} = 2.73\times10^{10}$ in favor of an effect (Default prior). The results all indicated that a high-level construal mindset promotes categorizing information based on thematic relations.

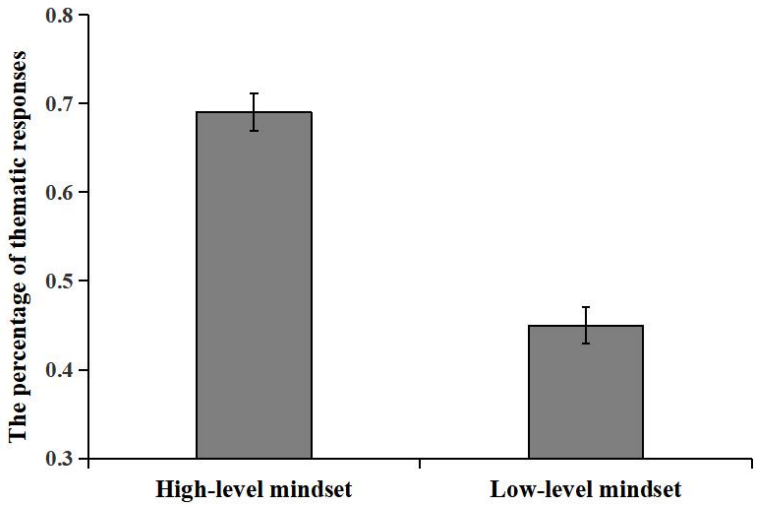

Fig 3. The percentage of thematic responses of high-level and low-level mindset groups (Error bars

represent the average standard errors).

Experiment 2

Previous research has found that individuals tend to classify natural objects based on taxonomic relationships (e.g., Kalénine et al., 2009; Kalénine & Buxbaum, 2016). In Experiment 1, we employed a real-world version of the Triad task in which all the presented objects were artifacts, such as cars. In Experiment 2, we expanded our investigation to examine whether a high-level construal mindset still promotes the categorization of information based on thematic relations when the objects being categorized were natural objects, commonly referred to as "natural kinds," such as cats. Additionally, in Experiment 2, we introduced a non-priming group as a control group to provide a comparison. If a high-level construal mindset promotes categorization information based on thematic relations, when the objects being categorized were natural objects, we would also anticipate that participants who initiate a high-level mindset would exhibit a higher proportion of thematic responses compared to those who initiate a low-level mindset and participants in the control group.

Methods

Participants and design

Consistent with Experiment 1, we determined the sample size based on effect sizes from related research: for example, Estes (2012, Study 3) reported an effect size of $f = 0.13$, and Li et al. (2023, Exp. 2) found an effect size of $f = 0.41$. By averaging these two effect sizes ($f =$

0.27) and targeting a power of 0.80 with an alpha level of $\alpha = 0.05$ in G*Power (Faul et al., 2009), specifying the number of groups as 3 resulted in a total sample size of 138. Aiming for higher power, we recruited 200 undergraduate students for the study (101 male and 99 female, mean age = 21.15 years, *SD* = 0.94 years). Of these participants, 66 (34 male and 32 female) were assigned to the high-level construal mindset group, 67 (36 male and 31 female) were assigned to the low-level construal mindset group, and 67 (31 male and 36 female) were assigned to the control group. All participants will receive corresponding course credits.

The study utilized a between-subjects single-factor design. Cognitive type (high-level construal mindset, low-level construal mindset, and control) served as the between-subject variable, with the dependent variable measured as the proportion of theme-related responses in the triad task. A higher proportion indicates a greater tendency for participants to categorize information based on thematic relationships.

Materials and procedure

As in Experiment 1, high-level and low-level construal mindsets in Experiment 2 were primed using the construal-level priming task developed by Freitas et al., (2004). The control group did not receive any inducement.

After completing the construal-level priming task, all participants completed a natural-world version of the triad task, in which all the objects were natural objects (The full list of stimuli is in Appendix A). The stimuli were presented in the same way as in Experiment

1. Similarly, the stimulus was identical to the stimulus used in previous studies conducted by Guest et al. (2016) and Lin et al. (2001). To ensure the cross-cultural validity of the experiment, we undertook the translation and back-translation process of the word material to create the Chinese version employed in the experiment.

Results and discussion

Firstly, the manipulation check revealed that the manipulation of construal level was successful. The main effect of the levels of construal was found to be significant, F (2, 197) = 38.33, $p < 0.001$, $\eta^2 = 0.28$, $BF_{10} = 7.45\times10^{11}$ in favor of an effect. Post-hoc tests with Bonferroni corrections for multiple comparisons indicated that participants who belong to the high-level mindset group ($M = 18.77$, $SD = 4.03$) chose a higher proportion of high-level alternatives in the BIFthan the low-level mindset group ($M = 12.73$, $SD = 3.81$), $p < 0.001$, 95% CI [4.373; 7.679], $BF_{10} = 1.17\times10^{12}$ in favor of an effect, and the control group ($M = 15.81$, $SD = 4.10$), $p < 0.001$, 95% CI [1.284; 4.589], $BF_{10} = 423.56$ in favor of an effect. In addition, participants who belong to the control group chose a higher proportion of low-level alternatives in the BIF than the low-level mindset group, $p < 0.001$, 95% CI [1.443; 4.736], $BF_{10} = 1207.06$ in favor of an effect.

Subsequently, we similarly conducted a correlation analysis to examine the relationship between the scores of three groups of participants on the Behavioral Identification Form (BIF) and their proportion of theme-related responses in the triad task. The results revealed a

significant positive correlation between the scores on the BIF and the proportion of theme-related responses in the triad task, $r(198) = 0.27$, $p < 0.001$, $BF_{10} = 167.13$ in favor of an effect (Default prior). Furthermore, additional regression analysis demonstrated that the scores on the BIF significantly positively predicted the proportion of theme-related responses in the triad task, $\beta = 0.27$, $t(198) = 3.98$, $p < 0.01$, $BF_{10} = 208.83$ in favor of an effect (Default prior).

Finally, we calculated the percentage of thematic responses in the high-level mindset, low-level mindset, and control groups (see Fig. 4). Then, using a one-way ANOVA, it was found that the main effect of the levels of construal was significant, $F(2, 197) = 24.70$, $p < 0.001$, $\eta^2 = 0.20$, $BF_{10} = 3.67\times10^7$ in favor of an effect. Post-hoc tests with Bonferroni corrections for multiple comparisons indicated that the percentage of thematic responses of students with the high-level mindset group ($M = 0.64$, $SD = 0.22$) was significantly higher than that of students with the low-level mindset group ($M = 0.38$, $SD = 0.18$), $p < 0.001$, 95% CI [0.171; 0.352], $BF_{10} = 1.08\times10^9$ in favor of an effect, and the control group ($M = 0.49$, $SD = 0.24$), $p < 0.001$, 95% CI [0.063; 0.243], $BF_{10} = 119.41$ in favor of an effect. The results of the study revealed that even when individuals were categorizing natural objects, a high-level construal mindset promotes categorizing information based on thematic relations.

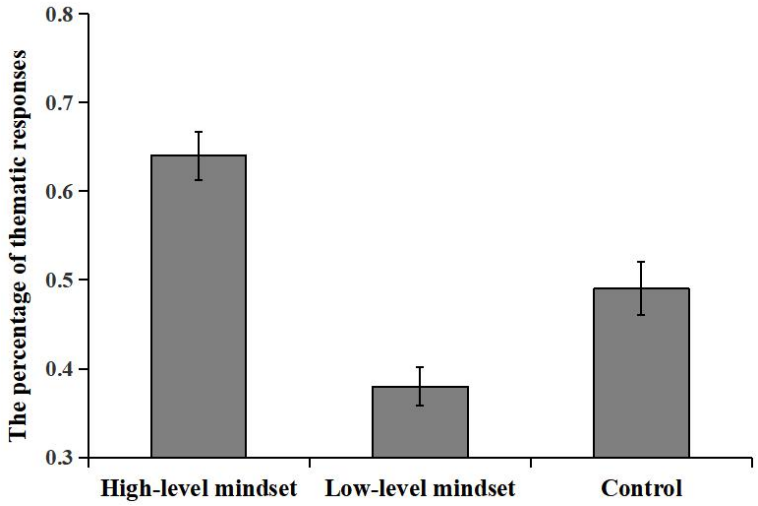

Fig 4. The percentage of thematic responses of high-level mindset, low-level mindset, and control group (Error bars represent the average standard errors).

General Discussion

This study investigated whether a high-level construal mindset promotes categorizing information based on thematic relations. The findings demonstrated that regardless of whether the object of classification was an artifact (Experiment 1) or a natural object (Experiment 2), participants who initiated a high-level mindset exhibited a higher proportion of thematic responses in the triad task. These results suggest that a high-level construal mindset promotes categorizing information based on thematic relations.

This study builds upon previous research on when individuals tend to categorize information based on thematic relations. Prior studies have provided evidence that various factors, including generating solutions to distant analogies, unconscious thought, increasing

age, and East Asian culture, influence individuals' propensity to categorize information based on thematic relations (Berger et al., 2006; Li et al., 2022; Li et al., 2023; Nisbett et al., 2003). Extending these findings, the present study further demonstrates that a high-level construal mindset promotes the categorization of information based on thematic relations.

This study provides more direct evidence for the influence of a high-level construal mindset (abstract thinking) on individuals' preferences for classifying information. Previous research has found that initiating global processing will lead individuals to classify information based on thematic relations (Guest et al., 2016), and categorizing abstract concepts relies more strongly on thematic relations (Crutch & Warrington, 2010). Despite the activation of global processing at the perceptual level and the classification of abstract concepts are both closely related to abstract thinking, researchers have not directly explored the relationship between abstract thinking and classification based on thematic relations. This study found that a high-level construal mindset promotes categorizing information based on thematic relations.

The present study supports the Construal Level Theory (CLT). Based on the perspective of the CLT, high-level construal mindsets are more inclusive, emphasizing information integration and global processing (e.g., Shapira et al., 2012; Trope et al., 2010). Unlike classifying information based on categorical relationships, categorizing information based on thematic relations focuses on discovering the overall relationships between objects (Guest et

al., 2016; Mirman et al., 2017). The present study found that a high-level construal mindset promotes categorizing information based on thematic relations. The results of this study support the Construal Level Theory.

Future research could explore a broader range of classification tasks to investigate whether a high-level construal mindset promotes categorizing information based on thematic relations. In this study, we employed the classic triad task, a forced-choice task with only two options. While this task has been widely used to measure individuals' tendencies to categorize based on thematic or taxonomic relationships, a recent study by Honke and Kurtz (2019) challenged its validity, suggesting that, in some cases, it may not accurately measure such tendencies. In response to this challenge, Honke and Kurtz (2019) adapted and developed the Ring Task based on the classic triad task. Therefore, future research should consider using the Ring Task to further investigate whether a high-level construal mindset promotes categorizing information based on thematic relations.

In future studies, it is imperative to select participants from diverse cultural backgrounds and investigate whether individuals from varying cultural contexts tend to categorize information based on thematic relationships when adopting a high-level construal mindset. Among the existing studies, Nisbett et al. (2003) discovered that Europeans and Americans lean towards categorizing information using category relations. Furthermore, Masuda et al. (2001) also observed that Europeans and Americans tend to process information locally. This

local processing tendency could lead individuals to categorize information based on taxonomic relations (Guest et al., 2016). The participants in our study were individuals from East Asian culture, specifically Chinese university students. In future research, it is advisable to include individuals from Euro-American cultures as participants to further explore this phenomenon.

Compliance with Ethical Standards

Conflict of Interest

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Research Involving Human Participants

The study was conducted after obtaining Institutional Review Board approval from the Department of Psychology at Northwest Normal University. We received the written consent of all participants before testing began. All procedures performed in studies involving human participants were by the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

Data availability

The data from this study have been uploaded to the OSF sharing platform at the following access link, and none of the experiments was preregistered.

https://osf.io/78eug/?view_only=a9630a70964d42b8916ea281358e98b7

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Appendix A: Items used in Experiments 1, 2 (The triad task)

Experiments 1			**Experiments 2**		
Base item	Taxonomic	Thematic	Base item	Taxonomic	Thematic
lamp	flashlight	desk	bird	swan	tree
tent	hut	camp	rabbit	squirrel	carrot
ship	yacht	sailor	owl	eagle	night
airplane	car	pilot	ear	nose	sound
toothbrush	hairbrush	denture	coconut	pineapple	palm tree
Movie theatre	opera house	popcorn	pig	dog	barn
movie	documentary	producer	cat	lion	litter box
French fries	baked potato	ketchup	cactus	willow	dry climate
cake	cookie	birthday	dog	cat	bone
shirt	jacket	tie	bee	butterfly	honey
fur	hair	coat	cow	buffalo	farm
hot dog	steak	mustard	penguin	goose	The Antarctic
police car	sedan	police officer	panda bear	grizzly bear	bamboo
chalk	marker	blackboard	spider	wasp	spider web
ambulance	fire truck	stretcher	squirrel	rat	nut
diamond ring	bracelet	engagement	camel	antelope	desert