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Construal level of thought and the perceived norm level: A quasi-experiment study

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Abstract

This study examines how the construal level of thought influences the perceived abstraction of social norms. Based on construal level theory, we hypothesized that individuals with higher abstract thinking would evaluate norm-violating behaviors using more abstract (e.g., legal) norms, while those with lower-level thinking would rely on more concrete (e.g., group) norms. Using vignette-based questionnaires and the Behavior Identification Form (BIF), we surveyed 118 university students. Participants evaluated scenarios involving norm violations by either significant or unknown others. Results showed that higher construal levels were associated with more abstract normative evaluations, particularly when evaluating unfamiliar actors. These findings suggest that abstraction in thought modulates how individuals cognitively access social norms, with implications for understanding moral reasoning, legal judgment, and the evolution of complex social systems.

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Key words

Construal level theory; social norms; abstract thinking; legal norms vs. group norms; normative judgment

Resumen

Este estudio examina cómo el nivel de interpretación del pensamiento influye en la percepción de la abstracción de las normas sociales. Basándonos en la teoría del nivel de interpretación, planteamos la hipótesis de que las personas con un pensamiento más abstracto evaluarían los comportamientos que violan las normas utilizando normas más abstractas (por ejemplo, legales), mientras que aquellas con un nivel de pensamiento más bajo se basarían en normas más concretas (por ejemplo, grupales). Mediante cuestionarios basados en viñetas y el Formulario de Identificación de Comportamientos (BIF), encuestamos a 118 estudiantes universitarios. Los participantes evaluaron situaciones que implicaban violaciones de las normas por parte de personas significativas o desconocidas. Los resultados mostraron que los niveles de interpretación más altos se asociaban con evaluaciones normativas más abstractas, especialmente al evaluar a actores desconocidos. Estos hallazgos sugieren que la abstracción en el pensamiento modula la forma en que los individuos acceden cognitivamente a las normas sociales, lo que tiene implicaciones para la comprensión del razonamiento moral, el juicio legal y la evolución de los sistemas sociales complejos.

Palabras clave

Teoría del nivel de interpretación; normas sociales; pensamiento abstracto; normas jurídicas frente a normas grupales; juicio normativo

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1. Introduction

1.1. Construal level of thought and perceived norm abstraction: Theoretical background: Construal Level Theory

The Construal Level Theory (CLT) posits that psychological distance influences the level of abstraction in human thought and judgment (Trope and Liberman 2010). According to this Theory, abstract thinking is associated with greater psychological distance, whereas concrete thinking corresponds to immediate and specific perceptions. This framework extends beyond the mere psychological distance perception to include various other facets of human cognition, such as risk-taking behavior (Lermer *et al.* 2015), self-control (Fujita *et al.* 2006), moral judgment (Wu *et al.* 2017), and decision-making processes (Braga *et al.* 2015).

The central premise of the CLT is that individuals vary in their propensity for abstract versus concrete thinking and that these differences systematically influence subsequent perceptions and actions. This study investigates the relationship between individual differences in construal level tendencies (measured as trait-like propensities for abstract versus concrete thinking) and the perceived abstraction of social norms. It is important to note that this study employed a correlational design to measure individual differences in construal-level tendencies, rather than experimentally manipulating construal states. While this limits causal inferences, it provides valuable insights into the naturally occurring relationships between thinking styles and normative judgments.

1.2. Conceptual framework of norm types

To establish our theoretical framework, we distinguish several types of norms that are conceptualized along an abstraction continuum.

Within this broad category of norms, we identified three distinct types that varied in their levels of abstraction:

FIGURE 1

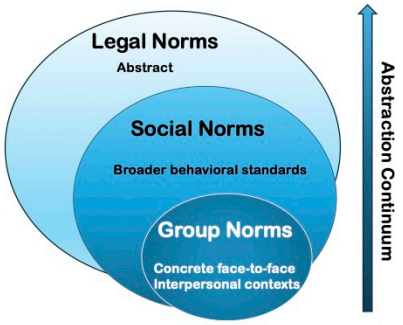

Figure 1. Conceptual hierarchy of norms along the abstraction continuum.

1.2.1. Group norms

Group norms are behavioral standards shared among small face-to-face groups through direct observation and interaction. These norms are relatively concrete, because they emerge from specific interpersonal contexts and are reinforced through immediate social feedback. Group norms have evolved primarily to ensure group survival by encouraging behaviors that benefit group members (Feldman 1984).

1.2.2. Social norms

Social norms represent broader behavioral standards that extend beyond immediate groups to encompass larger social units. These norms are more abstract than group norms because they apply to broader audiences and do not necessarily require direct interpersonal interactions for their enforcement. Social norms are patterns of behavior that are self-enforced and collectively adhered to within a group (Deutsch and Gerard 1955). Social norms define acceptable behaviors and facilitate predictable social interactions, acting as "social glue" that ensures coordinated behavior and maintains order within societies (Kahneman and Miller 1986).

1.2.3. Legal norms

Legal norms constitute formalized social norms that have been codified in law and are characterized by linguistic abstractions and broad applicability. Legal norms are considered the most abstract form of social norms because they are abstracted through language, reflect societal ethical standards, and are broadly applied across diverse contexts (Posner 1997, Deffains and Fluet 2019, Pryima 2021). Legal norms evolve from pre-political social rules that are formalized to represent a distinct form of social norm operating at the societal level.

This abstraction continuum reflects critical functional differences. Group norms operate at the individual level to facilitate immediate social coordination, whereas legal norms function at the societal level to promote broader cooperation and resource conservation (Peterson and Barreto 2015). The distinction between levels is crucial because norms serving different functions require different cognitive processes for interpretation and application.

1.3. Integration: Construal level and norm interpretation

Research suggests that an individual's abstraction level in thinking influences their interpretation and application of different types of norms. Language abstraction can influence emotion-related morals in groups, with abstract thinking enhancing self-control and promoting moral behavior (Wu *et al.* 2017). Furthermore, linguistic intergroup bias research demonstrates that abstract descriptions attribute behaviors more to groups than specific descriptions, supporting the notion that the level of abstraction influences norm interpretation (Assilaméhou *et al.* 2013).

Evidence suggests that group norms are more concrete (Bilewicz *et al.* 2017), whereas legal norms, communicated through language (Hart and Green 2012) and operationalized by larger social institutions (Kennedy 1976), are inherently more abstract (Fuller 1964, Bourdieu 1987). These findings suggest that individuals' construal

level tendencies may systematically influence the type of normative framework they employ when evaluating social situations.

However, the existing research presents some apparent contradictions. Psychological distance has been found to strengthen adherence to group norms (Ledgerwood and Callahan 2012), which contradicts the hypothesis that greater psychological distance (associated with abstract thinking) promotes reliance on more abstract legal norms. This apparent contradiction may be understood by the influence of additional contextual factors such as the familiarity of the actors involved in norm violations, on the relationship between construal level and norm type.

1.4. Study purpose and hypotheses

This study examined whether individual differences in construal-level tendencies influence the perceived abstraction of normative frameworks when evaluating social situations. We manipulated two contextual factors: actor familiarity (whether the norm violator was a significant other or an unknown person) and event severity (the magnitude of the norm violation). Furthermore, we included event severity as a key factor because the seriousness of a violation may influence the type of norm deemed applicable. Generally, violations with more severe consequences tend to elicit judgments based on universal formal principles (i.e., abstract legal norms) rather than personal or contextual considerations (i.e., concrete group norms).

This assumption is consistent with findings suggesting that individuals exhibit heightened moral sensitivity to higher levels of harm (Trémolière and De Neys 2013). However, while such evidence supports the idea that outcome severity modulates the salience of moral principles, it does not imply that individuals apply different categories or levels of norms, such as shifting between group-based and society-wide standards, depending on the severity of the event. From a theoretical perspective, Powell and Horne (2017) argued that moral psychology must address both first-order moral judgments and second-order meta-ethical questions regarding how people compare, rank, and articulate the seriousness of moral transgressions. If both types of judgments draw on shared cognitive representations, moral reasoning theories must account for how domain-general structures interface with norm-level selection. Therefore, we explored whether the interaction between an individual's construal level and actor familiarity became more pronounced as the severity of the scenario increased, in line with the broader framework of norm selection and moral evaluation.

Our central hypothesis was that construal level tendencies interact with contextual factors to influence preferences for norm abstraction.

Based on the theoretical framework outlined above, we formulated three specific predictions:

Prediction 1: Respondents with higher construal-level tendencies will use more abstract norms (legal frameworks) to evaluate norm violations than those with lower construal-level tendencies, who will rely more heavily on concrete norms (group frameworks).

Prediction 2: The difference in normative evaluations described in Prediction 1 will be more pronounced when evaluating unknown actors. When the actor is a significant other, respondents with higher construal level tendencies will shift toward more

concrete norms, and their responses will converge with those of respondents with lower construal level tendencies.

Prediction 3: Actor familiarity will have a primary effect on norm abstraction, such that norm violations by significant others will be evaluated using more concrete normative frameworks, whereas violations by unknown actors will be evaluated using more abstract normative frameworks.

These predictions integrate the CLT with the social norm theory by proposing that construal level tendencies influence norm interpretation but that this relationship is moderated by the social context of the norm violations. This approach addresses the apparent contradiction in the existing literature by suggesting that the relationship between abstraction and norm type depends on the interpersonal context of normative evaluation.

2. Method

2.1. Study overview

We employed a mixed-factorial design with 118 university students to examine the relationship between individual differences in construal level tendencies and normative judgment abstractions. This study employed blocking to control individual differences in construal level tendencies rather than experimentally manipulating construal states. While this limits causal inferences, it provides valuable insights into the natural relationship between thinking styles and normative judgments. Participants completed the Behavior Identification Form (BIF) to assess their construal-level tendencies and then evaluated three vignettes describing norm violations. We manipulated actor familiarity (sibling vs. unknown person) between participants and scenario severity within participants. The dependent variable was the participants' evaluation of judgement based on concrete (group-based) or abstract norms (legal-based) on a 7-point scale.

2.2. Procedure

Participants completed the study using one of two methods. In the first method, the purpose of the study was explained to undergraduate psychology students in online classes. Students who understood and agreed to participate completed the questionnaire outside of class using a computer-based form accessible through a URL or QR code. The second method involved face-to-face classroom data collection in which we explained the study during in-person classes and distributed paper-based questionnaire packets to volunteers. In both methods, we explicitly stated that participation was voluntary, anonymous, and would not affect course grades regardless of the response content or participation decision.

2.3. Participants

On average, 118 undergraduate university students (42 males, 74 females, and two unknown; 20.43 years old, SD = 3.71) responded to the questionnaire. Participants were recruited from specialized psychology classes and participated either by completing paper questionnaires in the classroom or responding to online forms outside the classroom. Of the total respondents, 68 completed the questionnaire electronically, and

50 completed it on paper. Participation was voluntary and anonymous, with no course credit, monetary rewards, or other compensation provided.

2.4. Experimental design

This study used a 2 × 2 × 3 mixed-factorial design. The first factor classifies participants into high- and low-construal level groups based on their responses on the BIF. The second factor, actor familiarity, was manipulated between participants at two levels: familiar (sibling) and unfamiliar (unknown). Participants without siblings were asked to imagine that they had siblings. The third factor, scenario severity, was manipulated within the subjects across three levels, representing increasingly problematic social situations. Each scenario was designed to be realistic and within the participants' realm of experience while avoiding extremely serious violations.

2.5. Measures

2.5.1. Behavior Identification Form (BIF)

We administered the Behavior Identification Form (BIF: Vallacher *et al.* 1987, Vallacher and Wegner 1989) to assess individual differences in construal-level tendencies. The BIF consists of 25 items, each presenting a behavioral description with two alternative interpretations: one concrete and one abstract. For example, participants choose between "Getting organized" (abstract) or "Writing things down" (concrete) for the behavior "making a list." We reviewed the BIF items and removed six items deemed culturally inappropriate for the Japanese participants after careful review by the authors and consultation with Japanese psychology faculty, which resulted in 19 items in the final measure. We removed items containing cultural references or activities that are uncommon in Japanese university settings (e.g., "attending a wedding" was changed to a more culturally relevant scenario). This modification ensured construct validity while maintaining the theoretical foundation of the scale. Higher BIF scores indicate a greater tendency toward abstract thinking.

2.5.2. Vignettes and norm evaluation task

We present three vignettes describing norm violations of varying severity. Each vignette featured either a sibling (familiar condition) or an unknown person (unfamiliar condition) as the actor committing a violation.

Vignette 1 (Property misuse): A student uses classmates' belongings without permission.

Vignette 2 (debt non-repayment): An individual borrows money from a friend and fails to repay it.

Vignette 3 (Traffic accident): A driver negligently causes an accident, resulting in injury to a passenger's friend.

2.5.3. Dependent variable: Norm abstractness scale

Our primary dependent variable measured the extent to which participants evaluated norm violations using a concrete (group-based) versus an abstract (law-based) normative framework. For each vignette, participants responded on a 7-point scale, which varied for each vignette:

Vignette 1 (Property use): 1 = "It is sloppy, but nothing to make a fuss about" (concrete/group norm) to 7 = "It constitutes theft and should be legally addressed" (abstract/legal norm)

Vignette 2 (Money borrowing): 1 = "You would ask the actor to repay it and see what happens" (concrete/group norm) to 7 = "You should consult a lawyer" (abstract/legal norm)

Vignette 3 (Traffic accident): 1 = "If the actor responds in good faith and takes the friend to hospital, nothing more needs to be done" (concrete/group norm) to 7 = "The driver's act constitutes unintentional vehicular injury and should stand trial" (abstract/legal norm)

2.6. Scale development and validation

The scale anchors were developed through pilot testing with 20 participants to ensure that they represented concrete versus abstract normative evaluations. The anchors were refined based on the participant feedback to maximize clarity and face validity.

2.7. Data analysis

We employed a median split of BIF scores (median = 7.50) to create high- and low-construal-level groups for several reasons: (1) this approach facilitates a clear interpretation of construal-level effects, (2) it enables examination of interactions between construal level and actor type, and (3) it aligns with previous construal-level research using similar categorical approaches (Trope and Liberman, 2010).

A 2 (construal level: high vs. low) × 2 (actor type: sibling vs. unknown person) × 3 (vignette type: property use, money borrowing, and traffic accidents) mixed design ANOVA was conducted. The first two factors were between-subject variables, and the vignette type was a within-subject variable. The dependent variable was the participants' evaluation of norm abstractness, measured on 7-point scales as described in the Methods section. Both main and interaction effects were analyzed.

This paper adheres to the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) reporting guidelines for quasi-experimental study designs (Des Jarlais *et al.* 2004). The TREND framework provides systematic standards for reporting nonrandomized evaluations, particularly those examining behavioral and psychological interventions. Furthermore, whereas randomized controlled trials follow CONSORT guidelines (Hopewell *et al.* 2025), quasi-experimental designs require specialized reporting standards that address unique methodological considerations inherent in nonrandomized research. The CONSORT statement, recently updated in 2025, primarily addresses randomized trials, whereas TREND specifically addresses the complexities of quasi-experimental designs that characterize the current investigation.

We acknowledge that continuous analysis represents an alternative approach and will explore this in future research. As supplementary analysis, we conducted regression analyses using continuous BIF scores to examine the linear relationships between construal-level tendencies and norm abstractness ratings.

3. Results

3.1. Participant classification

Participants were classified into high- and low-construal level groups based on their BIF scores using a median split approach (median = 7.50). This approach facilitates a clear interpretation of construal level effects, enables the examination of interactions between construal level and actor type, and aligns with previous construal level research using similar categorical approaches (Trope and Liberman 2010). The high construal level group consisted of 59 participants with BIF scores of 7.5 or higher, while the low construal level group included 59 participants with scores below 7.5.

3.2. ANOVA results

3.2.1 Primary analysis

The analysis revealed a significant main effect of construal level on norm abstractness ratings. Participants with higher construal level tendencies evaluated norm violations using more abstract normative frameworks (M = 4.43, SD = 1.12) compared with those with lower construal level tendencies (M = 3.97, SD = 1.08, $F_{(1, 114)}$ = 12.45, $p < .001$, η^2 = .098).

3.2.2 Interaction effects

A significant interaction emerged between construal level and actor familiarity, $F_{(1, 114)}$ = 6.68, p = .011, η^2 = .055. When the norm violator was a sibling, the participants showed no difference in norm abstractness evaluations, regardless of their construal-level tendencies (high construal: M = 4.15, SD = 1.18; low construal: M = 4.21, SD = 1.14). However, when the norm violator was a stranger, participants with higher construal level tendencies applied significantly more abstract normative frameworks (M = 4.71, SD = 1.21) than those with lower construal level tendencies (M = 3.73, SD = 1.19).

The main effect of actor type was not significant, F(1, 114) = 2.14, p = .146, η^2 = .018. However, vignette type had a significant main effect, F(2, 228) = 15.96, $p < .001$, η^2 = .036, indicating that the three scenarios differed in their perceived norm abstractness levels. The interaction between construal level and vignette type approached significance, F(2, 228) = 2.66, p = .072, η^2 = .006.

3.3. Post hoc analyses

3.3.1. Vignette-specific analyses

Individual analyses of vignettes revealed differential patterns. The interaction between construal level and actor type was not significant for the property use vignette, F(1, 114) = 0.39, p = .532, η^2 = .003. For the money borrowing vignette, this interaction approached significance, F(1, 114) = 2.80, p = .097, η^2 = .025. The traffic accident vignette showed a significant interaction effect, F(1, 114) = 10.00, p = .002, η^2 = .088, providing the strongest support for our hypothesis that construal level differences would be most pronounced in severe norm violation scenarios involving unfamiliar actors.

3.4. Supplementary continuous analysis

To address potential concerns regarding the median split approach, we conducted supplementary analyses, treating BIF score as a continuous variable. Multiple regression analysis using BIF score, actor type, and their interaction as predictors yielded consistent results. The interaction between continuous BIF score and actor type remained significant, $\beta = 0.18$, $t(114) = 2.58$, $p = .011$, confirming that the categorical approach to BIF did not substantially affect our conclusions.

TABLE 1

Actor in the vignette	Respondents' construal level	Vignette		
		Borrowing without permission	No repayment	Injury in a car accident
Unknown other	Concrete (N = 29)	4.48	3.41	3.31
	Abstract (N = 25)	4.92	4.52	4.84
Significant other	Concrete (N = 30)	4.9	3.33	4.4
	Abstract (N = 34)	4.91	3.32	4.06
Overall	N = 118	4.81	3.60	4.13

Table 1. Means for evaluations of norma abstractness.

FIGURE 2

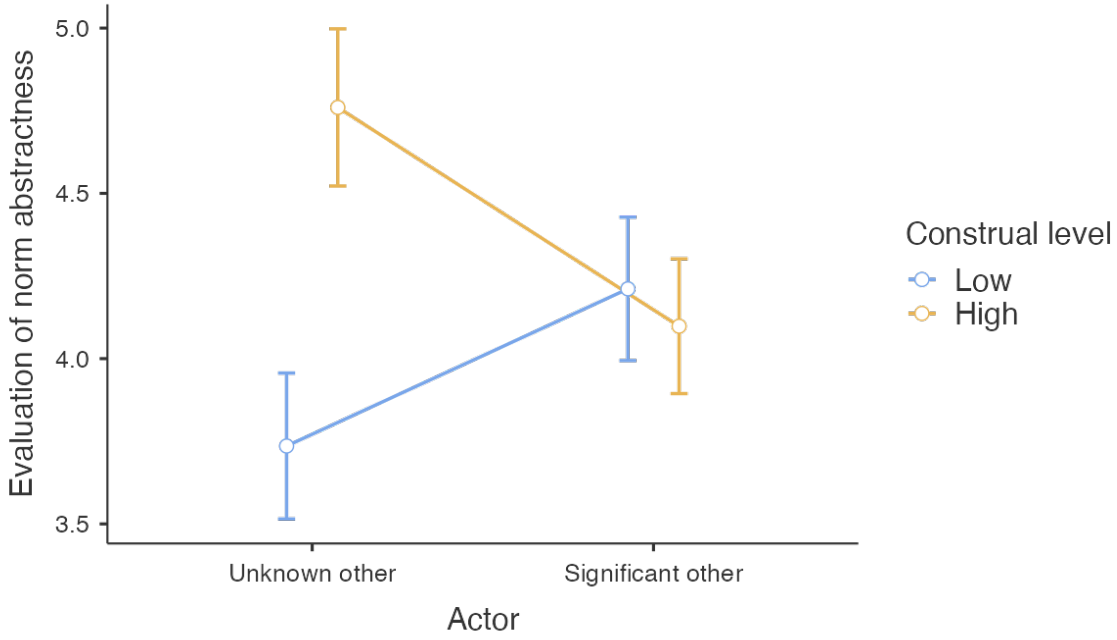

Figure 2. Means for norm abstractness by construal level and actor.

4. Discussion

This discussion section examines the relationship between individual differences in construal-level tendencies and the abstractness of norms used to evaluate behavioral violations, with a particular focus on how actor familiarity moderates this relationship. The findings demonstrate that individuals with higher construal-level tendencies

systematically employ more abstract normative frameworks when evaluating norm violations. In contrast, those with lower construal-level tendencies rely on more concrete, context-specific standards. This pattern suggests that cognitive style fundamentally shapes how individuals interpret and apply normative principles, with abstract thinkers gravitating toward universal, principle-based evaluations while concrete thinkers emphasize situational and relational factors in their normative judgments.

The theoretical implications of these findings extend beyond construal level theory to encompass moral psychology and evolutionary perspectives on social cognition. The results indicate that construal-level tendencies modulate the activation of different moral foundations, with abstract thinking promoting reliance on universal principles of fairness and justice, while concrete thinking emphasizes loyalty and contextual obligations. Furthermore, the moderating effect of actor familiarity reveals an adaptive flexibility in normative thinking that may reflect evolutionary pressures favoring different normative strategies for in-group versus out-group members. This dual capacity for both concrete relationship-based norms and abstract principle-based norms appears to represent a sophisticated cognitive mechanism that enables humans to navigate complex social environments effectively, maintaining group cohesion through concrete norms while facilitating broader social cooperation through abstract normative frameworks.

4.1. Support for hypotheses

Our first prediction was that respondents with higher construal-level tendencies would use more abstract norms to evaluate events presented in the vignettes than would those with lower construal-level tendencies. The ANOVA results indicated that the overall means of evaluating abstractness significantly differed by the respondents' group based on their construal level tendencies ($F_{(1, 114)} = 12.45$, $p < .001$, $\eta^2 = .098$), thereby supporting Prediction 1. These tendencies suggest that the respondents' normative interpretations vary systematically with the level of abstraction employed to evaluate instances of norm violations. Respondents with higher construal-level tendencies evaluate the situation using more abstract norms, whereas those with lower construal-level tendencies evaluated the situation using more concrete norms.

Group norms are behavioral standards that emerge through direct observation of concrete group members' actions and subsequent identification with those standards. These norms represent the most concrete level of normative interpretation, as they are grounded in specific observable behaviors within face-to-face groups. By contrast, social norms assume behavioral standards that apply broadly across contexts and do not necessarily depend on the presence of immediate group members, as exemplified by legal regulations. Such norms are expressed through the extraction of common principles regarding which behaviors should be encouraged or discouraged. Through this abstraction process, legal norms are perceived as more abstract and thus more suitable for linguistic codification and broad applications. The results of the Prediction 1 are consistent with the theoretical framework, positioning group norms as concrete and social norms as abstract normative categories.

Prediction 2 was that the difference in normative evaluations shown in Prediction 1 would be more pronounced when the actor is an unknown other. When the actor was a significant other, we predicted that respondents with higher construal-level tendencies would respond using more concrete norms and would converge toward respondents with lower construal-level tendencies. The post hoc comparisons partially supported this prediction. The repeated measures ANOVA revealed a significant interaction between actor and construal levels ($F_{(1, 114)} = 6.68$, $p = .011$, $\eta^2 = .055$). When the actors were unknown, high construal level respondents demonstrated significantly higher norm-abstractness levels than those with low construal level respondents ($t_{(114)} = -3.158$, $p = .002$). Conversely, when the actor was a significant other, the abstractness in the normative evaluation between the construal levels did not differ significantly ($t_{(114)} = 0.38$, $p = 0.704$). High-construal level respondents evaluated unknown others using significantly more abstract norms than when evaluating significant others ($t_{(114)} = 2.11$, $p = .037$). In contrast, low construal level respondents showed no significant difference in norm abstractness between actor types ($t_{(114)} = -1.53$, $p = .129$).

Our third prediction was that, if the actor was a significant other, the event would be evaluated using more concrete norms. By contrast, if the actor was an unknown other, it would be evaluated using more abstract norms. The data did not support this prediction, as the main effect of actor type on norm abstractness evaluation was insignificant ($F_{(1, 114)} = 2.14$, $p = .146$, $\eta^2 = .018$).

4.2. Theoretical implications

Based on the patterns of support and non-support for these predictions, several theoretical implications have emerged. First, individual differences in construal-level tendencies systematically influence the abstraction level of the norms used to evaluate events. This finding extends the CLT to the domain of normative judgment, demonstrating that characteristic thinking styles affect norm recognition and application. Furthermore, our findings can be interpreted through the lens of moral foundation theory (MFT: Haidt 2001). MFT posits that human morality relies on several innate psychological foundations. Our results suggest that an individual's construal-level tendencies may influence which of these foundations becomes salient when making a normative judgment. High-level abstract thinking, especially for unknown others, may activate the **Fairness/cheating** foundation, which relies on the universal principles of justice and rights, and result in the application of law-based norms. In contrast, low-level concrete thinking may activate the **Loyalty/betrayal** foundation when evaluating significant others, prioritizing context-specific obligations to one's in-group. Thus, our study potentially bridges the CLT and MFT by suggesting that cognitive style may be a key mechanism that shapes moral intuition.

This finding aligns with the framework of moral psychology, particularly Turiel's social domain theory. According to this theory, moral and conventional norms constitute distinct domains of social knowledge and are characterized by their universality, inalterability, and independence from authority, whereas conventional norms are context-dependent, alterable, and contingent on social agreement (Turiel 1983). Our results reflect this theoretical dichotomy closely. The distinction observed in our study between abstract legal norms and concrete group norms parallels the moral-

conventional divide, suggesting that individuals may differentiate norm violations of a transgression based on its perceived universality and authority independence.

Moreover, this interpretation is supported by developmental meta-analytic evidence. Young children, even in their early childhood, consistently distinguish morals from conventional transgressions by judging moral violations as more serious, less contingent on authority, and more universally applicable (Yoo and Smetana 2022). This developmental consistency underscores the robustness of the moral-conventional distinction across age groups, further supporting our proposition that the perceived abstractness of a norm influences its classification.

Taken together, our results suggest that construal level tendencies modulate normative framing processes. Specifically, higher construal levels appear to increase the likelihood that individuals interpret norm violations as breaches of abstract, universally binding moral principles rather than violations of local social conventions. This interpretation aligns with prior work that links abstract thinking to high-level construal processes (Trope and Liberman 2010). By integrating evidence from moral development and the CLT, our findings offer a novel account of how abstract cognitive tendencies shape normative evaluation.

However, actor familiarity moderates the relationship between construal-level tendencies and norm abstractness. While the abstraction of norms differed substantially based on construal-level tendencies when evaluating unknown others, this difference was eliminated when evaluating significant others. This pattern suggests that evaluating familiar individuals may activate different cognitive processes than when evaluating strangers.

This finding can be interpreted from the evolutionary perspective of human social cognition. Individuals with higher construal-level tendencies retain the capacity for abstract thinking when evaluating unknown others, allowing them to apply broad principle-based norms. However, when evaluating significant others, they shift toward more concrete relationship-based normative frameworks. This adaptive flexibility may reflect evolutionary pressures that favor different normative strategies for in-group and out-group members.

If humans had evolved into small migratory groups similar to those observed in contemporary hunter-gatherer societies, significant others would have belonged to their immediate social group, where concrete behavioral norms maintained group cohesion (Dunbar 1992). In such environments, individuals are subject to direct observation and potential sanctioning by group members, making concrete behavior-specific norms functionally adaptive for maintaining group stability and cooperation. Therefore, humans may have been evolutionarily programmed to automatically access group-based normative frameworks when evaluating significant others.

The capacity for abstract normative thinking may represent a later evolutionary development that enabled humans to form larger and more complex social structures beyond immediate kinship groups. However, this ability may not be equally distributed among individuals. Individuals with higher construal-level tendencies can engage in abstract normative frameworks when evaluating unknown others without triggering concrete group-based thinking patterns associated with significant others. This dual

capacity—contextual concrete thinking for familiar others and abstract thinking for strangers—likely provided evolutionary advantages by enabling them to effectively navigate both intimate and extended social relationships.

4.3. Implications

4.3.1. For understanding social cognition

These findings suggest that abstract normative thinking is a skill that has evolved to transcend the limitations of small-group social organizations, enabling humans to establish cooperative relationships across broader social networks (Dunbar 1992, 1995). Individuals capable of high-level abstract thought may have gained evolutionary advantages by assuming leadership roles in larger communities or facilitating coordination across multiple social groups. This interpretation aligns with the observation that individuals with higher construal level tendencies often demonstrate greater cognitive flexibility, maintaining the ability to think concretely when evaluating significant others while accessing abstract frameworks for unfamiliar individuals.

The dual capacity for concrete and abstract normative thinking may have provided humans with evolutionary advantages in navigating complex social environments. Concrete relationship-based norms facilitate trust and stability within intimate social circles, while abstract principle-based norms enable cooperation and coordination across larger social structures. This adaptive flexibility in normative thinking may represent a key mechanism underlying human success in forming relationships with individuals and larger societies.

4.3.2. The evolutionary significance of abstract norm recognition

The relationship between construal levels and norm abstraction observed in our study may reflect a fundamental cognitive capacity that contributes to human social evolution. Our findings indicate that individuals with higher construal-level tendencies demonstrate a greater ability to recognize and apply abstract normative frameworks. This capacity may be crucial for the large-scale development of human society.

Abstract norm recognition is a critical evolutionary advantage that distinguishes humans from other social species. Although many animals demonstrate rule-following behavior within small groups, humans possess the unique ability to recognize and adhere to abstract principles that extend beyond immediate social contexts (Tomasello 2018). This enables the coordination of behavior among individuals who may never directly interact, allowing for the formation of complex societies with thousands or millions of members.

The present study's findings suggest that the ability to recognize abstract norms emerges from individual differences in construal-level tendencies. Individuals who demonstrate higher levels of abstract thinking prefer more universal principle-based normative frameworks over context-specific relationship-based norms. This cognitive pattern may have provided selective advantages in ancestral environments, where cooperation with non-kin and coordination across larger social groups became increasingly necessary for survival and reproduction.

Archaeological evidence suggests that human societies began expanding beyond small kinship groups approximately 12,000 years ago, coinciding with the development of agriculture and the establishment of permanent settlements (Bellwood 2022). This transition required new forms of social coordination that extended beyond the characteristic face-to-face interactions of small hunter-gatherer groups. The ability to recognize and apply abstract norms—principles that could govern behavior between strangers and across different contexts—would have been essential for managing these larger and more complex social systems.

Our findings contribute to the understanding of the functioning of this cognitive capacity at the individual level. The observed relationship between construal level and abstract norm recognition suggests that humans vary in their ability to engage in universal principles versus contextual considerations. This variation may reflect different adaptive strategies, with some individuals specializing in maintaining abstract social rules, and others focusing on managing concrete interpersonal relationships. Both capacities would have been valuable for group functioning, with abstract norm recognition enabling large-scale coordination and concrete norm application while maintaining cohesion within smaller social units.

This evolutionary perspective provides a framework for understanding why humans achieve unprecedented social complexity, despite lacking the physical advantages of other species. The capacity for abstract norm recognition, supported by enhanced construal level thinking, may represent a key innovation that enables the transition from small-to large-scale societies. Future research should investigate how cognitive capacity develops across the lifespan and varies across different cultural contexts, particularly those that emphasize different balances between universal principles and contextual flexibility.

4.3.3. Implications for legal decision-making

Our findings suggest that individual differences in abstract thinking may influence the interpretation and application of different norms in legal contexts. Specifically, individuals with higher construal-level tendencies showed greater reliance on formal legal standards when evaluating the behavior of unfamiliar actors while flexibly applying more contextual, relationship-based standards for familiar others. This pattern has practical implications for several areas of legal practice.

The interaction between construal level and actor familiarity observed in our study indicates that legal decision makers may systematically vary in their norm application. High-construal-level individuals demonstrated a consistent preference for abstract legal frameworks when evaluating strangers' conduct, suggesting that they may be more likely to apply universal legal principles regardless of contextual factors. In contrast, the same individuals demonstrated greater flexibility in applying concrete and relationship-based norms when familiar actors were involved, indicating their ability to modulate their normative frameworks in response to social proximity.

These findings have implications for jury selection and judicial decision making. Legal practitioners should consider individual differences in abstract thinking when evaluating potential jurors' approaches to case evaluations. Individuals with higher construal-level tendencies tend to focus on formal legal standards and statutory

requirements. In contrast, those with lower construal levels tend to emphasize contextual factors and interpersonal dynamics. This knowledge could inform voir dire questioning and help attorneys anticipate how different jurors interpret evidence and apply legal instructions.

Regarding judicial training and legal education, our results suggest that awareness of these cognitive differences can enhance the decision-making quality. Training programs might benefit by incorporating exercises to help legal professionals recognize when abstract principles should take precedence over contextual considerations and vice versa. This dual capacity enables legal professionals to interpret the law with principled consistency, while remaining sensitive to the specific contexts of individual cases.

4.4. Limitations of this study

4.4.1. Correlational nature of this study's design and causal inference

One limitation of this approach is that we did not experimentally manipulate respondents' construal levels; instead, we grouped participants based on existing variations in their construal-level tendencies measured through the BIF. These limitations arise from our ability to establish causal relationships between construal levels and normative judgments. The current study employed a blocked design to measure and control individual differences as categories in construal-level tendencies rather than experimentally manipulating construal states. While this approach provides valuable insight into the naturally occurring relationships between thinking styles and normative judgments, it constrains our capacity to draw definitive causal conclusions regarding the mechanisms underlying these associations.

For a more robust investigation, future research should employ experimental manipulations of construal levels such as priming techniques that encourage abstract or concrete thinking (Trope and Liberman 2010). By directly manipulating abstraction levels, researchers can examine whether such interventions causally affect judgments regarding normative behaviors. This experimental approach would allow for more rigorous conclusions regarding the relationship between construal level and normative decision-making processes (Ledgerwood and Callahan 2012). This approach would strengthen the validity of the findings and address concerns regarding the direction of causality in the observed relationships.

4.4.2. Group membership effects

Another significant limitation pertains to our comparative analysis of evaluative judgments based on group and legal norms, which does not account for the influence of group membership. Group membership influences normative evaluations, particularly in determining whether an individual perceives the actor as an in-group or out-group member (Tajfel and Turner 1986). This distinction can substantially alter interpretations of behaviors, as people tend to evaluate in-group members more favorably than out-group members–a phenomenon known as in-group favoritism (Brewer 1999). Our current design did not systematically manipulate or measure the participants' perceived group membership in relation to the actors in the vignettes, which represents a theoretical gap in the understanding of the interaction between social identity and construal-level effects.

Future studies could benefit from experimental designs that explicitly manipulate group-membership factors to evaluate how they interact with construal levels to form normative judgments. This approach enhances our understanding of the social psychological mechanisms underpinning normative evaluations and deepens our understanding of how group identity shapes interpretations of different norm types. Such investigations could reveal whether construal-level effects vary depending on the social distance between evaluators and norm violators.

4.4.3. Sample homogeneity and generalizability

One potential limitation is the homogeneous nature of our sample, which consisted exclusively of university students. University students may exhibit heightened levels of abstract thinking owing to academic training and exposure to analytical tasks (Vallacher and Wegner 1989). This demographic constraint restricts the generalizability of our findings to a broader population as educational background may affect normative judgments (Henrich *et al.* 2010). Academic environments may cultivate patterns of abstract reasoning that differ from those found in other populations, thereby potentially limiting the external validity of our conclusions.

To achieve broader external validity, future research should incorporate more diverse samples, including individuals from various educational, occupational, and cultural backgrounds. This would enable researchers to assess whether similar patterns exist among participants with varying levels of abstract reasoning influenced by age, experience, and cultural factors. This diversification enhances confidence in the generalizability of construal level effects on normative judgments across different populations.

4.4.4. Cultural context and generalizability

Another limitation concerns the cultural context in which our data were collected, which constrains the generalizability of our findings. Our sample was drawn from a Japanese university population, a context that, while being similar to Western, Educated, Industrialized, Rich, and Democratic (WEIRD) population, possesses distinctive cultural characteristics regarding norm adherence and context dependency in some respects. The observed tendency of high construal individuals to shift toward concrete norms when evaluating significant others may reflect a culturally specific pattern of relational flexibility rather than a universal cognitive mechanism. Thus, the question that remains unanswered is whether the interaction between construal level and actor familiarity is a stable cognitive phenomenon or is modulated by broader cultural orientations toward social norms.

To address this limitation, future research should systematically examine these relationships across diverse cultural contexts, particularly by applying the framework of "tight" and "loose" cultures (Gelfand *et al.* 2011). In tight cultures, characterized by strong social norms and a low tolerance for deviant behavior, the pressure to adhere to overarching abstract norms may be powerful enough to override the influence of individual cognitive styles, such as construal levels. Consequently, construal-level tendencies may have a diminished effect on normative judgment in these contexts. Conversely, in loose cultures with weaker norms and greater tolerance for deviance, the impact of construal levels on normative judgment, as observed in our study, may be

even more pronounced. Such cross-cultural investigations are essential for determining whether the findings reflect universal cognitive processes or culturally specific normative frameworks, thereby clarifying the boundaries of the observed effects.

4.4.5. Ecological validity of vignette methodology

The reliance on hypothetical vignettes to measure normative judgments presents another limitation. While vignettes provide a controlled means of eliciting participants' responses, they may lack ecological validity, as hypothetical judgments may not accurately predict behavior in real-life situations. According to attitude-behavior correspondence theory (Ajzen 1991), hypothetical scenarios can fail to evoke genuine behavioral responses, as respondents are not subjected to the contextual pressures of reality. The artificial nature of vignette-based judgments may not fully capture the complexity of real-world normative decision-making.

Future studies should consider integrating real-world behavioral tasks or field experiments to enhance the applicability of these findings. Such approaches could bridge the gap between theoretical and practical understandings of normative judgments, providing more nuanced perspectives on how construal levels influence behavior in authentic social contexts. This methodological advancement strengthens the ecological validity of construal level research in normative domains.

4.4.6. Behavioral outcome measures

While our study observed normative judgments as outcomes of varying construal levels, it did not examine how these judgments translated into actual behavior. Normative judgments often function as precursors to behavior; however, the link between cognition and action is complex and influenced by numerous contextual factors (Fishbein and Ajzen 1975). The current investigation focused on evaluative responses rather than behavioral intentions or actual behaviors, which limits our understanding of the practical implications of construal level effects on normative adherence.

Future studies should explore this progression by including behavioral outcome measures, such as participants' willingness to conform to group or legal norms in laboratory-based settings. This approach could reveal whether individuals with differing levels of abstract thinking perceive norms differently and act on them in distinct ways. By extending the research to encompass behavioral implications, future studies could contribute to a more comprehensive understanding of the impacts of construal level on social behaviors, ultimately supporting the development of interventions that foster prosocial behaviors aligned with varying levels of normative abstraction.

4.5. Future research directions

For a more robust investigation of these relationships, future studies should experimentally manipulate construal levels using temporal or psychological distance priming techniques. This approach strengthens causal inferences about the relationship between construal levels and normative abstraction. Additionally, future studies should systematically manipulate both norm type and consequence severity to explore their independent effects on normative evaluations.

Future research should examine these relationships in diverse cultural contexts, particularly by applying the framework of "tight" and "loose" cultures. In tight cultures, which have strong social norms and low tolerance for deviant behavior, the pressure to adhere to overarching abstract norms (such as laws) might be so strong that it overrides the influence of individual cognitive styles such as construal level. Conversely, in loose cultures with weaker norms and greater tolerance for deviance, the impact of individual differences in construal levels on normative judgment, as observed in our study, may be even more pronounced. Such investigations would help to determine whether the observed patterns reflect universal cognitive processes or culturally specific normative frameworks.

Finally, neuroimaging studies may shed light on the neural mechanisms underlying the transition between concrete and abstract normative thinking, particularly in response to actor familiarity. Understanding the neural basis of this adaptive flexibility will provide deeper insight into the evolutionary origins and architecture of human normative cognition.

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