The user wants me to translate a Chinese academic paper title into English. Let me analyze the title: “人际互动情境中虚假记忆的主动构建“去个性化”在社会感染效应中的作用” Breaking it down: - 人际互动情境中 = in interpersonal interaction contexts / in the context of interpersonal interaction - 虚假记忆的主动构建 = active construction of false me···

Authors: The user has provided “王慧” which is a Chinese name. This is not a paragraph with tags, LaTeX commands, or any of the complex formatting described in the instructions. It’ s simply a name.

According to the instructions: - I should translate from Simplified Chinese to English - Preserve ALL LaTeX commands and placeholders - Preserve ALL citation commands - **PRESERVE ALL ···paragraph wrapper tags EXACTLY** - Maintain academic tone - Use precise technical terminology from the glossary - The glossary only contains: 机器学习 => machine learning and 深度学习 => deep learning

The input “王慧” doesn’ t contain any of these elements. It’ s just a name. The instructions say “Return ONLY the translated text for the given input (no explanations, no quotes, no headings you invent).”

For Chinese names, the standard academic translation is to use pinyin. “王慧” would be “Wang Hui” . In academic contexts, Chinese names are typically written with the surname first, followed by the given name, often with the surname in all caps or just capitalized normally. The most common format is “Wang Hui” or “WANG Hui” . I’ ll use “Wang Hui” as it’ s the most standard for English academic writing.

Since there are no tags, I should just return the translated name. The instructions say “Keep one output paragraph per input paragraph; do not merge or split paragraphs.” But there’ s no paragraph here. It’ s just a name.

I should just return “Wang Hui” as the translation. No tags, no explanations, just the name.

Wait, let me re-read the instructions carefully. The user provided “王慧” which is

just a name. The system prompt is very specific about preserving tags, LaTeX, etc. But the input doesn' t have any of those. The instructions say "Translate from Simplified Chinese to English with the highest accuracy and academic tone."

For a name, the translation is transliteration. "王慧" becomes "Wang Hui" in pinyin, which is the standard academic convention.

The output should be just the translated text. Since there' s no paragraph tag, I shouldn' t add one. I should just output "Wang Hui".

But wait, the instructions are very strict about tags. Let me check if the user might have made a, The user has provided a single Chinese character "董妍". This appears to be a person' s name. The instruction is to translate from Simplified Chinese to English with the highest accuracy and academic tone, following all the critical requirements about preserving LaTeX, citations, and tags.

However, the input "董妍" is just a name, not a full paragraph with tags. Let me check the requirements again:

1. The system prompt says I should translate from Simplified Chinese to English with academic tone
2. I must preserve ALL LaTeX commands and placeholders
3. I must preserve ALL citation commands
4. **PRESERVE ALL ···paragraph wrapper tags EXACTLY**
5. Maintain academic tone and formal scientific writing style
6. Use precise technical terminology - obey the glossary strictly
7. Preserve section structure and paragraph organization
8. Translate all content completely - do not omit any information

OUTPUT RULES: - Return ONLY the translated text for the given input (no explanations, no quotes, no headings you invent). - Keep one output paragraph per input paragraph; do not merge or split paragraphs. - **Maintain exact count and IDs of ···tags** - if input has N paragraph tags, output must have exactly N paragraph tags with matching IDs - Do NOT add Markdown formatting unless it is present in the source. - Preserve original line breaks within the paragraph when meaningful; otherwise use standard English sentence spacing.

The input is just "董妍" without any tags, LaTeX, or citations. This is a name. In academic contexts, Chinese names are typically transliterated.

"董妍" would be transliterated as "Dong Yan" (surname first, then given name). In Western academic writing, it' s often written as "Yan Dong" (given name first) or sometimes "Dong, Yan".

Given the academic context, the most appropriate translation would be "Dong Yan" preserving the Chinese name order, or possibly "Yan Dong" if following Western convention. However, since the instruction says to translate with highest accuracy and preserve the original structure, I should keep the Chinese name

order.

But wait - the input doesn' t have any tags. The rules say I must maintain exact count and IDs of tags. If there are none in the input, should I add them? No, The user has provided a single Chinese name "董妍". This is a proper name, likely a person' s name. The instruction says to translate from Simplified Chinese to English with the highest accuracy and academic tone, following specific rules about preserving LaTeX, citations, and tags.

However, the input is just "董妍" - it' s not a paragraph with tags, LaTeX commands, or any of the structural elements mentioned in the instructions. It' s simply a name.

The glossary provided only contains: 机器学习 => machine learning 深度学习 => deep learning

"董妍" is not in the glossary. It' s a Chinese personal name. In academic translation, Chinese names are typically transliterated (Pinyin) or kept as is, depending on the context and author preference. The standard practice in English academic papers is to keep the Pinyin form "Dong Yan" or sometimes "Yan Dong" (surname first, then given name, or given name first depending on the style guide).

Since there are no tags, LaTeX commands, or citations to preserve, and the input is just a name, I should: 1. Recognize this as a proper name 2. Apply standard academic transliteration practice 3. Keep it simple and direct

The most common format would be "Dong Yan"(surname + given name) or "Yan Dong" (given name + surname). In Chinese academic contexts, the surname-first format is often preserved, so "Dong Yan" would be appropriate. However, some style guides prefer given name first for English publications.

Given the minimal context and the fact that this appears to be a standalone name (perhaps an author name), I should provide the standard Pinyin transliteration. The most neutral and widely accepted academic approach is to use the Pinyin as is: "Dong Yan" .

But wait - the instructions are very specific about output format. They say: - Return ONLY the translated text for the given input (no explanations, no quotes, no headings you invent). - Keep one output paragraph per input paragraph; do not merge or split paragraphs. - **Maintain exact count and IDs of ···tags**

The input doesn' t have any tags. So what should I do? The instructions seem to be designed for a specific structured document format, but the user has provided just a name.

I think the most reasonable interpretation is that if there are no structural tags

Date: 2025-04-16T15:34:13+00:00

Abstract

The user wants me to translate a Chinese academic text to English. Let me analyze the requirements:

1. **Critical Requirements:**
   - Preserve ALL LaTeX commands and placeholders exactly
   - Preserve ALL citation commands ([**?**], **??**, (**??**), etc.) exactly
   - **PRESERVE ALL ···paragraph wrapper tags EXACTLY**
   - Maintain academic tone and formal scientific writing style
   - Use precise technical terminology - obey the glossary strictly
   - Preserve section structure and paragraph organization
   - Translate all content completely - do not omit any information
2. **Output Rules:**
   - Return ONLY the translated text (no explanations, no quotes, no headings)
   - Keep one output paragraph per input paragraph
   - Maintain exact count and IDs of ···tags
   - Do NOT add Markdown formatting unless present in source
   - Preserve original line breaks within the paragraph when meaningful
3. **Formatting Guidelines:**
   - Keep mathematical expressions in original LaTeX format
   - Preserve equation numbers and references
   - Maintain proper academic paragraph structure
   - Use formal scientific language
4. **Glossary:**
   - 机器学习 => machine learning
   - 深度学习 => deep learning

Now let me examine the input text. It appears to be a single paragraph without any tags, LaTeX commands, or mathematical formulas. The text is about memory social contagion and interactive dynamics.

Let me translate it carefully:

"个体的记忆会被他人输出的错误信息所扭曲，从而形成虚假记忆，这一现象被称为记忆的社会感染。" -> "Individuals' memories can be distorted by misinformation from others, leading to the formation of false memories, a phenomenon known as memory social contagion."

"现有研究多关注人际因素对记忆的社会感染效应的影响，但往往将信息发送者和接收者视为独立单元，而忽略了二者之间的互动机制。" -> "Existing research has primarily focused on how interpersonal factors influence the effects of memory social contagion, but often treats information senders and receivers as independent units, neglecting the interactive mechanisms between them."

"鉴于此，本研究从互动动力学的视角深入探究记忆的社会感染的内在过程。" -> "In light of this, the present study investigates the underlying processes of memory social contagion from the perspective of interactive dynamics."

"互动模式作为一种基本的互动动力，可能会影响社会感染效应的强度，并且其影响途径可能与互动中的"去个性化"反应有关。" -> "Interactive patterns, as a fundamental form of interactive dynamics, may influence the intensity of social contagion effects, and their influence pathways may be related to 'deindividuation' responses during interaction."

"未来研究可以验证"去个性化"反应发挥的作用并且进一步探究其作用机制。" -> "Future research could verify the role played by 'deindividuation' responses and further explore their underlying mechanisms."

Wait, I need to check if there are any tags in the input. Looking at the input again: "个体的记忆会被他人输出的错误信息

Full Text

Active Construction of False Memories in Interpersonal Interactions: The Role of "Deindividuation" in the Social Contagion Effect

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Abstract: Individual memory can be distorted by misinformation from others, leading to false memories—a phenomenon known as the social contagion of memory. Existing research has primarily focused on how interpersonal factors influence this effect, yet often treats information senders and receivers as independent units while neglecting the interactive mechanisms between them. Addressing this gap, the present study investigates the internal processes of memory contagion from the perspective of interaction dynamics. Interaction patterns, as a fundamental form of interactive dynamics, may affect the strength of social contagion, potentially through "deindividuation" responses that emerge during interaction. Future research should verify the role of deindividuation and further explore its underlying mechanisms.

Keywords: false memory, social contagion effect, interaction dynamics, deindividuation, interaction pattern

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Human memory is not infallible; rather, it is malleable and involves reconstructive processes (Conway & Howe, 2022; Zacks et al., 2022). This plasticity causes people to misremember past events or even recall entirely fabricated events that never occurred (Loftus, 2005; Raposo, 2023), giving rise to false memories. False memories formed in small-scale settings (such as among friends, partners, and other small groups) can spread through larger, more complex social networks (Luo et al., 2021), thereby compromising the accuracy of both individual and collective memory. In turn, collective false memories can influence personal

behavior and decision-making (Cordonnier et al., 2022; Luhmann & Rajaram, 2015). For instance, when false memories concern political or social-historical events, they may bias individuals' social participation, voting choices, or attitude expression (Verovšek, 2016). Given the pervasiveness and destructive potential of false memories in social contexts, investigating their formation mechanisms holds not only significant scientific value but also profound social implications for countering misinformation dissemination and mitigating its negative impacts in groups.

1. The Social Contagion of Memory and Its Research Paradigms

False memories do not arise solely from internal information processing—that is, they are not always spontaneously generated—but can be shaped through external media or social interaction (Abel & Bäuml, 2020, 2023). The social contagion of memory occurs when individuals integrate misinformation from others (also called "post-event information" or "second-hand information") into their own memories through interpersonal interaction, thereby distorting their memory for original information (Hart & Meade, 2021; Ito et al., 2019). For example, individuals may "recall" childhood events they never actually experienced through relatives' narratives (Loftus, 2005; Oeberst et al., 2021). The availability of misinformation during social interaction, combined with the reconstructive nature of memory, jointly contributes to erroneous memory representations.

Researchers have investigated the social contagion of memory using the social contagion paradigm and the social conformity paradigm (Maswood & Rajaram, 2019). Both paradigms involve three basic stages: encoding original information, interacting with others and encountering misinformation, and individual recall. Each paradigm includes two roles: information sender and information receiver. In the social contagion paradigm (Andrews-Todd et al., 2021; Hart & Meade, 2021), genuine participants (receivers) encode information alongside confederates (senders), after which they jointly recall as much information as possible. During this joint recall, confederates insert information inconsistent with the original material. Finally, genuine participants complete recall or recognition tasks for the original information alone. In the social conformity paradigm (Ito et al., 2019; Kękuś et al., 2024; Monds et al., 2019), no confederates are used; instead, two real participants encode different versions of information (e.g., in one version, a criminal looks at a watch, while in another, the criminal looks at a wall clock). This method gives each participant unique information, but experimenters lead them to believe they encoded identical material. Subsequently, the two participants act as sender and receiver, jointly recalling information, during which the receiver naturally encounters content discrepant from their own memory. Finally, each participant recalls independently.

The difference between the social contagion paradigm and the memory conformity paradigm lies in how misinformation is introduced, with variation primarily at the sender level and no substantive difference for the receiver.

2.1 Situational and Informational Factors

Situational influences manifest across different stages of experimental tasks (encoding, interaction, retrieval). During the encoding stage, shorter presentation times for original information increase susceptibility to social contagion (Roediger et al., 2001). During the interaction stage, experimenters often guide participants to believe they received identical information as their partner (Bodner et al., 2009), which reduces vigilance toward misinformation and increases the likelihood of contagion. Conversely, requiring participants to independently retrieve memories before interaction may strengthen consolidation of original information and reduce subsequent susceptibility to misinformation (Abel & Bäuml, 2020; Huff et al., 2013). During the retrieval stage, task type and external cues significantly affect contagion strength. For example, using source recognition tasks rather than free recall effectively reduces social contagion (Multhaup, 1995). Warning participants about potential inaccuracies in partners' responses (Huff et al., 2013; Kękuś et al., 2024; Yan et al., 2015), explicitly instructing them not to confuse post-event information with original memories (Bodner et al., 2009; Echterhoff et al., 2005; Hirst & Echterhoff, 2012), or providing stricter instructions for accurate recall (Wright et al., 2008) similarly weaken social contagion (Ecker et al., 2014; Huang et al., 2024).

At the informational level, higher similarity between misinformation and original information facilitates integration of misinformation into memory, exacerbating social contagion (Meade & Roediger, 2002; Roediger et al., 2001). Additionally, emotional or value-laden information triggers stronger social contagion than neutral information (Kensinger et al., 2016; Vosoughi et al., 2018).

2.2 Interpersonal Factors

Numerous studies have examined interpersonal influences, particularly factors related to information senders. Generally, when receivers hold high trust toward their partners (the misinformation senders), they also perceive the partners' output as accurate (Kękuś et al., 2021; Polczyk, 2017; Szpitalak & Polczyk, 2019). Some studies manipulate senders' memory ability and identity to alter receivers' perceptions of source reliability, finding that source reliability is a non-negligible factor in producing social contagion (Gabbert et al., 2007; Horry et al., 2012). Monds et al. (2019) had participants collaborate with confederates of lower, equal, or higher memory ability, finding that participants who perceived their partners as having better memory were more susceptible to contagion. Metacognitive questionnaire results indicated that misinformation only reduced participants' subsequent independent test performance when they felt their own memory was relatively poor. French et al. (2011) manipulated differences between participants' and partners' visual acuity, finding that participants who believed their vision was sharper than their partners' were less influenced by partners' misinformation. Previous research also shows individuals are less likely to accept misinformation from people of different age groups (Davis & Meade, 2013; Meade et al., 2017; Numata et al., 2020) or from out-group mem-

bers (Andrews & Rapp, 2014). Information from close others (Mojtahedi et al., 2018), experts (Mojtahedi et al., 2020; Williamson et al., 2013), or more confident individuals (Allan & Gabbert, 2008; Goodwin et al., 2017) is deemed more reliable.

Interpersonal factors also relate to information receivers. Receiver personality traits such as agreeableness (Doughty et al., 2017), social avoidance (Wright et al., 2010), self-esteem, and confidence levels (Monds et al., 2019; Thorley & Kumar, 2017) directly affect misinformation acceptance.

3. A New Perspective: Investigating the Social Contagion of Memory Through Interaction Dynamics

Previous research tends to treat information receivers and senders as independent units in interaction. However, since the social contagion of memory originates from social interaction contexts, it is necessary to consider factors related to how senders and receivers interact. Human interaction involves more than simple information transmission; individual behavior often results from mutual interaction with other members of the social context (Newcomb et al., 2015). Studies have found that when misinformation is pre-generated by senders and then presented to participants rather than produced in real-time interaction, individuals show less alignment with senders' responses (Allan & Gabbert, 2008). Only during real-time interaction with others do receivers' responses more readily align with post-event information, because interaction members evaluate each other' s mental states and intentions (Koike et al., 2016) and dynamically adjust their cognitive and behavioral patterns according to social norms. Therefore, it is essential to examine the dynamic interactive characteristics between receivers and senders, exploring how their mutual influence in group contexts affects receivers' memory distortion after leaving the group interaction—that is, investigating social contagion of memory from a group/interaction dynamics perspective.

Group dynamics theory posits that interaction patterns constitute a fundamental group dynamic, representing a crucial component that influences group members' behaviors and attitudes during social interaction (Garvin et al., 2017). Depending on the medium and context of interaction, the same information sender can engage in different interaction patterns. Common patterns include: (1) **Radiating pattern**: a leader-centered structure where group communication flows through the leader to members; (2) **Turn-taking pattern**: also called circular, where members speak one after another; (3) **Hot-seat pattern**: one member interacts with the leader or another member while others observe; and (4) **Free-style pattern**: all members can communicate freely with each other.

In dyadic interactions involving only two individuals, researchers refer to "group dynamics" as "interaction dynamics" (Provenzi et al., 2018). "Interaction dynamics" is an umbrella term encompassing how social partners influence each

other and co-construct meaning during social interaction (Boorom & Liu, 2024; De Jaegher, 2013). Since research on social contagion of memory also involves dyadic interaction and has used the term "interaction dynamics" (Maswood et al., 2022; Saraiva & Garrido, 2024), this paper adopts the same terminology. In essence, interaction dynamics involves members dynamically adapting and responding to each other during interaction, though their behavioral frequency and intensity may be asymmetrical (Boorom & Liu, 2024; Provenzi et al., 2018).

Saraiva and Garrido (2024) demonstrated that variations in interaction patterns may directly affect individuals' responses to misinformation and memory reconstruction. In their dyadic interaction study with two participants, they compared the effects of **turn-taking** (Marion & Thorley, 2016; Maswood et al., 2022; Saraiva et al., 2017) and **free-style** (Harris et al., 2012; Marion & Thorley, 2016; Maswood et al., 2022; Maswood & Rajaram, 2019; Vredeveldt et al., 2017) interaction patterns on false memories (Maswood et al., 2022; Saraiva & Garrido, 2024; Thorley & Dewhurst, 2007). In the turn-taking condition, participants alternated answering questions about original information, recorded their own and others' answers, and were not allowed to discuss. In the free-style condition, participants could freely communicate and had to reach consensus on each answer before proceeding. These patterns reflect different interaction dynamics: turn-taking involves lower interaction levels and represents a unidirectional information transmission mode where participants only receive shared information without providing feedback. In contrast, free-style interaction employs bidirectional exchange, allowing participants to provide feedback and express personal attitudes. Results showed that during interaction, free-style interaction produced fewer false alarms for misinformation than turn-taking, and in subsequent independent retrieval, individuals who had participated in free-style interaction also recalled less misinformation. Other studies (Maswood et al., 2022; Thorley & Dewhurst, 2007) similarly found that turn-taking interaction led to more false memories in subsequent individual retrieval.

However, Saraiva and Garrido' s (2024) study only demonstrates that communication and feedback during interaction help participants reject misinformation, not that interaction patterns directly affect social contagion. In free-style interaction, members can correct misinformation through discussion—so-called error pruning (Sun et al., 2023). Error pruning rectifies some misinformation, whereas in turn-taking interaction, group members cannot correct errors or provide mutual feedback. This means participants in the two conditions are actually exposed to different amounts of misinformation before final independent retrieval. Because the quantity and content of misinformation exposure differ across interaction patterns, so does the amount of misinformation recalled in the final individual memory test. Although existing studies have not eliminated such confounding factors (Maswood et al., 2022; Saraiva & Garrido, 2024; Thorley & Dewhurst, 2007), they lay the groundwork for further investigation. Future research could examine the direct effect of different interaction patterns on social contagion while ensuring participants are exposed to identical quantities and content of misinformation. This would deepen understanding of interaction dy-

namics' role in misinformation spread and memory reconstruction, providing more robust theoretical foundations for reducing false memories. The following sections explore the mechanisms through which interaction patterns influence social contagion of memory.

4. Mechanisms Underlying the Social Contagion of Memory

Betz et al. (1996) proposed three pathways leading to memory alignment with others. The first involves social contagion through distortion of personal memory. The second is termed informational influence, and the third normative influence—the latter being the mechanism of primary interest in this paper.

4.1 Social Contagion Through Distortion of Personal Memory

When asked to recall original information, individuals who have experienced memory distortion may unconsciously report post-event information, believing it to be a genuine recall of original information without recognizing it came from a second-hand source. Because information from secondary sources becomes stored in memory, post-event information becomes dissociated from its source and internalized. Loftus (1993) vividly likened post-event information to a "Trojan horse," as individuals typically fail to recognize its detrimental effects. Traditional cognitive theories proposed within the DRM paradigm to explain spontaneous false memories have been extended to explain why personal memory becomes distorted by post-event information, including source monitoring theory (Gronchi et al., 2023; Pena et al., 2017), fuzzy-trace theory (Abadie & Camos, 2019; Brainerd & Reyna, 2019), and implicit activation response theory (Sanderson & Ecker, 2020). These theories share the basic assumption that false memory formation relates to memory-related cognitive processes, typically resulting from "errors" in encoding, storage, or retrieval (Guo & Wang, 2021), which are usually unconscious. This pathway focuses primarily on intra-individual memory processes rather than social factors involved in interaction. Therefore, when investigating how interaction patterns affect social contagion of memory, this mechanism is not the core focus.

4.2 Social Contagion Through Informational Influence

Some research argues that social contagion effects should not be entirely attributed to cognitive errors but also require explanation from social psychology perspectives (Polczyk, 2017). False memories may emerge even when participants recognize that partners' information is inconsistent with original information and when post-event information does not affect their ability to recall original information (Kękuś et al., 2021). Informational influence can be illustrated by the statement: "I think the answer is 'X' (or 'I don' t remember'), but everyone else says 'Y' , so the answer must be 'Y' ." When asked to recall original information ("X"), individuals recall post-event information (

"Y") and accurately remember it was provided by others, yet also believe this post-event information ("Y") correctly reflects the original information ("X").

McCloskey and Zaragoza (1985) first examined this possibility. In their experiment, if original information was "hammer" and misleading post-event information was "screwdriver,"the final test required participants to choose between original information and unrelated information (e.g., "wrench") rather than between original ("hammer") and post-event ("screwdriver") information. McCloskey and Zaragoza (1985) argued that if reading misleading post-event information truly harmed memory for original information, misled participants should be less likely to select the correct option ("hammer") than non-misled participants. However, results showed otherwise, leading them to conclude that no evidence indicated post-event information negatively affected original memory. Findings from previous studies using original-versus-post-event choices should not be interpreted in terms of memory processes (encoding-consolidation-retrieval). Participants might have simultaneously remembered both original and post-event information but chose the latter when answering because they trusted others' accounts more than their own memory.

Subsequently, researchers proposed the "integration model" (Blank, 1998, 2005), suggesting that individuals face a problem-solving task when retrieving information, attempting to find solutions to memory tasks. Such solutions depend not only on original information in memory but also on participants' internal representation of the memory task. Typically, participants' internal representation follows the "coherence assumption" —in everyday communication, we generally assume interlocutors do not deliberately spread erroneous or unfounded information, as this would violate Grice' s (1975) cooperative principle. Therefore, people default to trusting information from communication partners. When individuals detect discrepancies between original and post-event information, they attempt to explain these differences, such as by concluding they misremembered. Under certain circumstances, such explanations may bias memory away from objective reality, producing false memories. In Blank' s (1998) first experiment, participants detected discrepancies between original and post-event information, yet over 40% of the time still gave answers consistent with misinformation. Further analysis revealed this primarily resulted from participants doubting their own memory ability.

Informational influence emphasizes that participants' judgments about the reliability of misinformation sources are key determinants of how they evaluate misinformation accuracy. Existing research shows that trust in misinformation sources often leads to greater social contagion (Kękuś et al., 2021; Polczyk, 2017; Szpitalak & Polczyk, 2019). However, this pathway also cannot serve as the core mechanism through which interaction patterns affect social contagion. Because different media and contexts may trigger different interaction patterns with the same sender, no research has clearly demonstrated that changes in interaction patterns directly alter judgments of information source reliability.

4.3 Social Contagion Through Normative Influence

Normative influence focuses on individuals' social cognition during interaction. It can be illustrated by the statement: "I think the answer is 'X', but everyone else says 'Y'. I don't want to cause trouble, so I'll say 'Y'." Here, internal beliefs remain unchanged (still believing the answer is 'X'). Individuals retain both original ("X") and post-event ("Y") information. Despite being able to recall original information, they respond in socially acceptable ways by repeating post-event information. The classic "deindividuation" phenomenon in social psychology represents a concrete manifestation of normative influence. When individuals are in groups, their internal morals or values weaken, and driven by social identification or belongingness needs, they tend to align with group norms or emotions (Diener, 1979; Festinger et al., 1952; Zimbardo, 1969) rather than act according to personal characteristics or values, thereby producing "deindividuation" (Chan et al., 2023; Vilanova et al., 2017). Asch's (1955) research long ago found that in social situations, people abandon correct judgments to comply with group norms and gain social acceptance. Later research showed that temporary behavioral adjustments during interaction can produce genuine perceptual changes (Zhan et al., 2025). In memory research, Allan and Gabbert's (2008) Experiment 2 found that during interaction, participants tended to conform to others regardless of whether they faced correct or incorrect answers. This conformity caused accuracy fluctuations relative to baseline (independent responding without exposure to others' answers): accuracy decreased when others provided wrong answers and increased when others provided correct answers. Researchers explained these results from an informational influence perspective but could not rule out that participants complied due to social pressure—that is, normative influence may also have played a role. Normative influence represents the core mechanism through which interaction patterns affect social contagion of memory, and the following sections elaborate on how this mechanism operates.

4.2 Deindividuation as the Mechanism Linking Interaction Patterns to Memory Contagion

4.2.1 Deindividuation During Interaction

Analogous to classic deindividuation in social psychology, similar behaviors may emerge during memory interactions. In group memory contexts, when others output misinformation, individuals are more likely to align with others' viewpoints because they are driven not only by task-related cognitive demands (correctly recalling encoded information) but also by normative influence (Allan & Gabbert, 2008; Ekeocha & Brennan, 2008). Normative influence can be explained at two levels. At the individual level, people have needs to maintain positive self-images and avoid negative evaluation (Ribino, 2023; Steinmetz et al., 2017; Wright et al., 2010). When information receivers express opinions differing from senders, being questioned may cause embarrassment and damaged self-esteem. Alternatively, receivers may view explicit opposition to others' opin-

ions as impolite and damaging to others' self-esteem (Chen et al., 2013). Therefore, for social impression management considerations, individuals may abandon their correct memories and accept others' information. At the group level, individuals have needs to comply with group norms (Fehr & Schurtenberger, 2018), particularly in East Asian cultures where maintaining collective harmony and "not standing out" is especially important (Huang, 2024). This leads information receivers to base their attitudes toward misinformation not only on their own memories but also on group goals and norms, selectively outputting or modifying their held information. At both individual and group levels, individuals may actively abandon their own viewpoints and accept others' misinformation, manifesting as memory "deindividuation" (Figure 1 [Figure 1: see original paper]).

Whereas previous research viewed false memories as resulting from misinformation "implantation" due to failure to identify errors during interaction, the present concept of deindividuation emphasizes that individuals identify misinformation from others yet still choose to accept it—a deliberate, active choice.

Figure 1. The process by which social interaction produces social contagion of memory through deindividuation.

4.2.2 Interaction Pattern Differences Elicit Varying Degrees of Deindividuation

Different interpersonal interaction patterns often generate different levels of social pressure (Thorley & Dewhurst, 2007), which may in turn produce varying degrees of deindividuation. Specifically, in turn-taking interaction, participants recall sequentially without mutual discussion, creating relatively low social pressure. In free-style interaction, participants discuss any member' s recalled information until reaching consensus, generating greater social pressure, such as maintaining self and others' esteem, avoiding conflict, complying with group norms, and promoting group harmony (Smith & Postmes, 2011). In such interaction patterns, individuals are more likely to be normatively influenced, suppress their own ideas, and accept others' misinformation. In contrast, under turn-taking interaction, because individuals only need to receive information without providing feedback, the influence of social factors (such as maintaining group harmony) significantly decreases, and behavior is less driven by normative influence. The psychological threshold for rejecting disagreeable information lowers, allowing individuals to process information more independently based on their genuine perceptions. Although Thorley and Dewhurst's (2007) research focused on how different social pressure contexts affect spontaneous false memories rather than how social pressure influences responses to others' information, it emphasized the importance of social pressure differences across interaction patterns for memory distortion.

Thus, different interaction patterns likely elicit different degrees of deindividuation. However, it remains unclear whether deindividuation responses in groups

cause distortion of personal genuine memories, as deindividuation represents a "tactical" response during interaction. Whether it alters individuals' original correct memories after leaving the interactive context requires further investigation.

4.2.3 Deindividuation May Cause Social Contagion of Memory

If individuals exhibit deindividuation during interaction and subsequently recall misinformation from the interaction as original information after leaving the interpersonal context, this would demonstrate that deindividuation during interaction indeed distorts personal genuine memories. That is, social contagion depends not only on information senders' output but also on receivers' "active compromise." Although misinformation is initially introduced by others, it is ultimately actively integrated into individuals' own memories during interaction with others, rather than being unconsciously "implanted." While no research has directly tested this possibility, studies on lying and memory can indirectly illustrate that active modification of original information persists beyond group interaction and may further distort subsequent personal recall.

Research has found that lying distorts memory. Such studies follow the same three-stage structure: participants first watch videos or perform actions, then undergo interviews where they answer honestly (honest group) or provide false responses (lying group) about encoded content. After two days or longer, independent memory tests assess honest recall of encoded content. Differences between groups on final memory tests evaluate lying' s impact on memory. Studies typically find that lying groups perform worse than honest groups, even mistaking lies for original information, indicating that lying causes false memories (Battista et al., 2021; Otgaar et al., 2016; Otgaar & Baker, 2018; Riesthuis et al., 2022a; Romeo et al., 2019). However, these results come from forced lying situations (where experiments require participants to lie).

Given that lying is a purposeful, intentional behavior (DePaulo et al., 2003) and intentionality is a key feature of deception (Walczyk et al., 2014), some research has examined voluntary lying' s effects on memory, also finding detrimental impacts (Li et al., 2022; Riesthuis et al., 2022b). Riesthuis et al. (2022b) used a sequential dyadic dice-throwing paradigm where participants and confederates (simulated by computer) took turns throwing dice and reporting outcomes to each other. When reporting, participants were randomly assigned to "strong-incentive lying" or "weak-incentive lying" conditions. In the strong-incentive condition, lying avoided financial punishment, making the outcome self-serving. In the weak-incentive condition, lying benefited others without personal gain or loss. Participants could decide whether to lie in both conditions. Two days later, memory for dice outcomes was tested. Results showed 38% and 35% of participants lied in the two conditions, respectively, with liars producing more false memories than truth-tellers, though false memories did not differ significantly between lying conditions. Thus, regardless of motivation, voluntary lying causes memory distortion.

Some research has specifically examined differences between forced and voluntary lying effects on memory. Dianiska and Meissner (2023) used an object paradigm with action, narration, and test phases. In the action phase, participants performed specified actions. In the narration phase, they described whether they had performed these actions. Voluntary group participants decided whether to lie: for performed actions, they could truthfully describe or falsely deny; for unperformed actions, they could truthfully deny or fabricate descriptions. Forced group participants were required to lie. One week later, the test phase assessed whether participants had performed actions in the action phase. Results showed that for unperformed actions, liars were more likely to falsely remember having performed them, with no differences in false alarm rates between forced and voluntary lying groups. However, other research indicates that when participants voluntarily provide false information, it is more likely to become a lasting memory. For example, Pezdek et al. (2007) found that participants who voluntarily fabricated answers were more likely to repeat those fabricated answers on a second memory test than those forced to fabricate.

In summary, whether forced or voluntary, and regardless of motivation, lies themselves may be remembered as facts in subsequent memory tests. Research on lying and memory supports our proposition that "deindividuation during interaction may persistently alter personal memory after interaction." In traditional lying research, misinformation (the lie) is generated by participants, whereas in the deindividuation context we focus on, misinformation is generated by others but actively accepted by participants. Although the source of misinformation differs, both emphasize that active, conscious negation of initially correct information adversely affects personal genuine memory.

5. Conclusion and Future Directions

This paper examined the social contagion of memory from an interaction dynamics perspective, focusing on how interaction patterns affect memory distortion. As a fundamental interactive dynamic, interaction patterns may influence social contagion strength through deindividuation responses during interaction. Investigating social contagion of memory from this perspective holds both scientific value and social significance. Scientifically, it provides insights into mechanisms through which misinformation is accepted and internalized during social interaction. Socially, understanding how misinformation spreads under different interaction patterns can inform effective prevention measures. For example, in group discussions or decision-making, rather than immediately entering free-style discussion, each individual should first independently output their viewpoints. Additionally, understanding deindividuation' s impact on memory can help design more targeted intervention strategies, such as strengthening information verification and reflection mechanisms in groups and encouraging information receivers to maintain independent judgment. Future research can proceed in the following directions.

5.1 Accurately Measuring Deindividuation Responses

Deindividuation is a concrete manifestation of normative influence. Future research should clearly distinguish normative influence from informational influence in interpersonal interaction. Existing studies on social contagion of memory have focused more on whether participants' responses align with others during interaction (Allan & Gabbert, 2008)—a behavioral-level response. Behavioral consistency alone cannot reveal whether social contagion results from informational or normative influence, because aligning with others during interaction may reflect either genuine agreement (informational influence) or response adjustment due to social pressure (normative influence). Future research should examine participants' cognitive judgments when encountering misinformation. When senders output misinformation, receivers may make three judgments: correct, incorrect, or uncertain. These different cognitive judgments can lead to identical behavioral responses but correspond to different influence mechanisms. For example, when judging information as uncertain, individuals may agree with post-event information due to informational influence; when judging it as incorrect, they may agree due to normative influence. Therefore, behavioral consistency alone does not indicate deindividuation; the relationship between cognitive judgment and behavioral response must be emphasized. Inconsistent judgments combined with consistent responses jointly demonstrate deindividuation.

To manipulate deindividuation, research must not only create situations where participants align with others but also ensure that others' information contradicts participants' own viewpoints—a crucial prerequisite for deindividuation. Future studies could adopt an "independent-then-interactive" design (Horry et al., 2012; Maswood et al., 2022; Saraiva & Garrido, 2024), establishing baseline memory levels for original information through an individual retrieval phase before interaction. If participants' responses during interaction align with both others and their pre-interaction independent judgments, deindividuation has not occurred. Additionally, post-interaction assessments of participants' experiences during interaction are needed, such as rating the extent to which their responses violated their genuine thoughts. In summary, future research must accurately measure deindividuation to prevent confusion with informational influence.

5.2 Examining the Effects of Delayed Retrieval Intervals

Memory updating requires time, and compared to genuine memories, false memories sometimes increase over time (Seamon et al., 2002). The reactivation/reconsolidation hypothesis posits that when we retrieve a memory, the neural trace is reactivated, and the memory enters a plastic state rather than being simply retrieved, making it flexible and capable of integrating new information (Carneiro et al., 2021; Chan & LaPaglia, 2013; Guo & Wang, 2021). Based on this view, we hypothesize that every stimulus during the interaction phase exhibits memory plasticity, and representations of information where others' judgments contradict one' s own become more unstable and modifiable. Due

to "interference" from others' judgments, individuals struggle to form consistent, stable representations of original information (Lehman & Malmberg, 2013; Osorio-Gómez et al., 2023), making memory distortion more likely. In previous research, after exposure to others' misinformation or after lying, false memories for misinformation or lies did not appear immediately but were measured after two days (Riesthuis et al., 2022a; Riesthuis et al., 2022b; Vieira & Lane, 2013), three days (Dianiska & Meissner, 2023), seven days (Dianiska & Meissner, 2023; Polage, 2019; Mangiulli et al., 2020; Pezdek et al., 2007), or even one month (Riesthuis et al., 2022a). This suggests that offline processes (such as sleep) can consolidate unstable memory representations into stable ones (Schacter et al., 2011). Therefore, social contagion effects triggered by deindividuation may exhibit delayed onset characteristics. Future research should employ longer retrieval intervals to fully observe the dynamic process of memory updating.

5.3 Exploring Why Deindividuation Causes False Memories

In research on lying and memory distortion, researchers propose that lying consumes more cognitive resources than truthful narration (Battista et al., 2021; Otgaar & Baker, 2018), thereby impairing original memory. Others suggest cognitive dissonance may be important, particularly in voluntary lying. Honesty is the default rule in most cultures, while deception is generally considered immoral. People experience cognitive dissonance when violating rules or internal beliefs (Pfister et al., 2016). To reduce dissonance, individuals may suppress universal rule-based responses (telling the truth) (Li et al., 2022) or alter their original beliefs to acknowledge the lie' s validity, leading to false memories (Rodriguez & Strange, 2015). Using an induced compliance paradigm, Rodriguez and Strange (2015) measured participants' attitudes toward tuition increases three times (on a 1-11 scale). The first measurement established baseline attitudes. The second measurement, after participants were divided into passive and voluntary lying groups who wrote statements supporting tuition increases, assessed their immediate genuine attitudes. The third measurement, two days later, required participants to recall their initial ratings. The researchers calculated "attitude change" (difference between immediate post-lying attitude and initial attitude) and "memory change" (difference between recalled original attitude and initial attitude). Results showed that compared to participants who passively supported proposals contrary to their initial attitudes, those who actively supported them showed greater attitude change (becoming more supportive of tuition increases) and greater memory change (more erroneous recall of original attitudes). Researchers attributed attitude change to cognitive dissonance reduction, with attitude change mediating the relationship between lying (dummy-coded for passive vs. voluntary conditions) and memory change.

In this paper, deindividuation can also be viewed as a form of lying, as it involves expressing agreement with information inconsistent with personal memory. After deindividuation behavior, individuals may also experience conflict between internal beliefs and actual behavior—cognitive dissonance. Future re-

search should further investigate whether social contagion effects following deindividuation responses stem from individuals internalizing contradictory viewpoints to reduce cognitive conflict.

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Note: Figure translations are in progress. See original paper for figures.