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Psychological Mechanisms of Spatial Relationships Between Interrogators and Suspects Influencing the Motivation to Confess

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Abstract: ***The spatial relationship between interrogators and suspects is an important situational factor influencing a suspect's motivation to confess. Based on interpersonal distance theory, this study decomposed the interrogation spatial relationship into three dimensions: relative distance, relative height, and relative orientation. An eight-condition spatial relationship paradigm was created through a 2×2×2 factorial experimental design. A questionnaire survey was conducted to assess the differential impacts of these conditions on confession motivation. Results indicated significant differences among the eight spatial relationships in facilitating confession motivation ($\chi^2(7)=94.65$, $p<0.001$). Among these, the "lateral-close-equal" spatial relationship had the most pronounced effect (31%), whereas spatial arrangements characterized by the suspect occupying a disadvantageous position had the weakest effect. Psychological mechanism analysis revealed that equal seating arrangements fostered positive emotional experiences by meeting suspects' needs for respect, reduced psychological distance, and enhanced interpersonal attraction, thereby increasing interrogators' persuasive effectiveness. Additionally, lateral positioning promoted confessions by reducing feelings of confrontation and satisfying personal space needs. This study provides a theoretical foundation for optimizing interrogation environments and enhancing the scientific basis of interrogation strategies.***

Keywords: Interrogation; Spatial relationship; Confession motivation; Interpersonal distance; Psychological mechanism.

1. INTRODUCTION

Confessions hold significant and irreplaceable value in criminal investigations. Studies have shown that over 80% of criminal cases are resolved through suspects' confessions, and once suspects confess, they are rarely acquitted [1]. Confessions not only directly prove criminal acts but also provide investigators with case-related information previously unknown to them, aiding in the discovery of deeper evidence such as crime tools, victims' bodies, and stolen items [2]. However, suspects typically exhibit three response patterns during interrogations: confessing, refusing to confess, or providing false confessions [3]. The first arises from the formation of a motivation to confess, while the latter two stem from obstacles to confession [4]. Therefore, promoting suspects' voluntary motivation to confess through scientifically informed interrogation strategies remains a central focus in investigative theory and practice [5].

Traditional interrogation studies primarily focus on verbal strategies and skills, such as timing, choice of location, and improving communication between interrogators and suspects [6]. However, non-verbal cues significantly outweigh verbal information in interpersonal communication, playing supporting, supplementary, emphasizing, and validating roles [7]. Spatial relationships constitute a crucial dimension of nonverbal communication, and their appropriate arrangement forms a key element of interrogation strategy. Researchers at home and abroad have proposed different recommendations for interrogation room spatial layouts. Concerning relative distance, there is disagreement over social distance (1.22-2.13 meters) versus intimate distance (0.45-1.22 meters) [8]. For relative height, opposing viewpoints include "equal eye level" versus "authoritative height" [9]. For relative orientation, conventional face-to-face interaction contrasts with innovative proposals advocating side-by-side communication [10].

Although previous research has addressed individual dimensions of interrogation spatial relationships, systematic investigations into the interactive effects among the three dimensions remain lacking. This study deconstructs spatial relationships into relative distance (far/close), relative height (equal/disadvantaged), and relative orientation (front/side) dimensions. Eight combinations of these dimensions were experimentally tested to explore their differential effects on suspects' confession motivation and underlying psychological mechanisms. This approach provides scientific theoretical guidance for practical interrogation strategies.

2. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

2.1 Three-Dimensional Structure of Spatial Relationships Between Interrogators and Suspects

Based on interpersonal spatial theory [11] and the specific characteristics of interrogation contexts, this study defines the spatial relationship between interrogators and suspects across three dimensions:

2.1.1 Relative Distance Dimension

Anthropologist Edward T. Hall classified interpersonal distance into four categories: intimate distance (0-0.45 m), personal distance (0.45-1.22 m), social distance (1.22-3.65 m), and public distance (above 3.65 m). In interrogation settings, the applicable ranges are the near range of social distance (1.22-1.9 m, referred to as "far distance" in this study) and the upper range of personal distance to the lower boundary of social distance (0.9-1.22 m, referred to as "close distance"). Far distance ensures suspects' personal space needs and reduces anxiety, whereas close distance may induce either pressure or intimacy, producing dual psychological effects.

2.1.2 Relative Height Dimension

Relative height reflects the power relationship and status differences between interrogators and suspects. A "suspect-disadvantaged position" refers to the interrogator's seat being higher than that of the suspect, creating a "looking-up" configuration that reinforces authority and pressure. In contrast, an "equal position" indicates that both parties are seated at the same height, forming a "level eye-line" configuration that conveys respect and equality [12]. In the Chinese cultural context, positions associated with authority are often linked to dignity and power, and elevated seating further reinforces such authority.

2.1.3 Relative Orientation Dimension

Face-to-face interaction refers to direct communication with an approximate 180-degree visual angle, whereas side-by-side interaction refers to a 90-degree seating arrangement without direct eye contact. Face-to-face interaction facilitates observation of facial expressions and nonverbal cues but may create a confrontational atmosphere. In contrast, side-by-side interaction reduces defensiveness and fosters a more relaxed environment, avoiding the potential psychological antagonism associated with direct confrontation and thereby lowering suspects' defensive responses.

2.2 Psychological Effects of Single-Dimensional Spatial Relationships

2.2.1 Psychological Mechanisms of Relative Distance

A greater distance generates a sense of security by satisfying personal space requirements. Personal space is conceptualised as a protective "bubble" around an individual, which serves to safeguard the self and regulate interpersonal interactions. When this need is met, suspects may experience positive emotions and lowered defensiveness. However, an excessively large distance can also reinforce hostile perceptions and lead to formulaic interpersonal relationships.

Conversely, a close distance may produce two opposite effects. On one hand, spatial intrusion may trigger anxiety and resistance, increasing psychological pressure on guilty suspects. On the other hand, for suspects inclined to form emotional connections, proximity can foster attachment through tactile communication and physical acceptance, thus shortening psychological distance and enhancing interpersonal attraction. People not only feel pleasure from comfortable touch but also develop emotional attachments to those who touch them. Physical acceptance marks the establishment of security in interpersonal interactions. Recent psychological research suggests that different communication distances create distinct interpersonal atmospheres; greater distances tend to foster a hostile, mutually aggressive environment.

2.2.2 Psychological Mechanisms of Relative Height

A disadvantaged seating position for suspects, characterised by a spatial arrangement where interrogators are positioned higher, reinforces the interrogators' sense of authority and deterrence. According to attitude-change theory, the credibility of persuaders, defined by expertise and reliability, is enhanced by authoritative spatial

positioning. When interrogators attempt to persuade suspects, this perceived authority increases their credibility [13]. However, in the Chinese cultural context, such an arrangement can lead suspects to experience negative feelings of disrespect, as well as significant suppression and fear. These negative emotional experiences of disrespect and fear are likely to create barriers to confession.

An equal seating position satisfies the "esteem needs" described in Maslow's hierarchy of needs, which represent a higher-level psychological requirement. Fulfilling this need can, to some extent, elicit positive emotional experiences in individuals [14], thereby facilitating interpersonal attraction between interrogators and suspects and increasing the likelihood of confession motivation. Additionally, equal positioning implies similarity in values between the two parties; according to attitude-change theory, greater perceived similarity between the persuader and the persuaded increases the effectiveness of persuasion. However, reducing the interrogator's authoritative advantage can weaken their perceived deterrent effect, potentially increasing suspects' sense of luck or optimism.

2.2.3 Psychological Mechanisms of Relative Orientation

Face-to-face interaction ensures the accurate transmission of nonverbal information, which constitutes over 65% of communication content, particularly facial expressions (55%). This enables interrogators to effectively perceive changes in suspects' emotional states and adjust interrogation strategies accordingly. Eye contact directly conveys interrogators' attention, keeping suspects focused on the questions posed. However, face-to-face seating inherently implies confrontation, activating defensive attitudes on both sides, and clearly delineating interpersonal boundaries, thereby intensifying mutual opposition.

Side-oriented interaction, lacking direct visual contact, creates relatively intact personal spaces, reducing feelings of confrontation and defensiveness, and establishing a natural, calm atmosphere for communication. For suspects who genuinely express remorse, the absence of direct observation of interrogators' potentially negative reactions facilitates a calmer psychological state, ensuring their confession proceeds without disruption.

2.3 Research Hypotheses

Based on the above analysis, the following hypotheses are proposed:

H1: The eight spatial relationship combinations significantly differ in their effects on confession motivation.
H2: Spatial relationships characterised by equal seating outperform those characterised by suspect-disadvantaged seating.
H3: The "side-close-equal" spatial relationship best facilitates confession motivation, as it simultaneously provides feelings of respect, security, and reduced confrontation.

3. METHODS

3.1 Participants

A convenience sampling method was used, selecting third-year undergraduate students from two classes at the Public Security University as participants. A total of 152 questionnaires were distributed, and 131 valid questionnaires were returned, resulting in an effective response rate of 86.2%. Participants included 95 males (72.5%) and 36 females (27.5%), aged 19 to 23 years, with good physical health and no history of psychiatric disorders.

3.2 Research Instrument

A self-developed "Questionnaire on the Influence of Spatial Relationships Between Interrogators and Suspects on Confession Motivation" was employed. The questionnaire comprised three parts:

1) Instructions: Participants were asked to imagine themselves as suspects in a dormitory theft case, whose fingerprints led to their detection and subsequent interrogation.

2) Spatial Relationship Diagrams: The interrogator's position was marked as Point O; Points A and B represented face-to-face positions (A: close distance, B: far distance); Points C and D represented side-oriented positions (C: close distance, D: far distance). Relative height was described textually as either "looking-up"

(suspect-disadvantaged) or "eye-level" (equal).

3) Options: Eight spatial relationship combinations (front-far-disadvantaged, front-far-equal, front-close-disadvantaged, front-close-equal, side-far-disadvantaged, side-far-equal, side-close-disadvantaged, side-close-equal).

3.3 Procedure

Questionnaires were administered collectively by class. The experimenter read the instructions aloud, emphasising the academic nature of the study and guaranteeing anonymity. After reading scenario materials, participants selected the spatial relationship combination most likely to motivate their voluntary confession. Completed questionnaires were subsequently collected.

3.4 Data Analysis

Statistical analyses were conducted using SPSS 13.0, primarily employing descriptive statistics and chi-square (χ^2) tests, with the significance level set at $\alpha = 0.05$.

4. RESULTS

4.1 Overall Distribution of Spatial Relationship Preferences

Participants' choices among the eight spatial relationship combinations are presented in Table 1:

Table 1: Participants' selection distribution for spatial relationships (N = 131)

Spatial Relationship	Front-Far-Disadvantaged	Front-Far-Equal	Front-Close-Disadvantaged	Front-Close-Equal	Side-Far-Disadvantaged	Side-Far-Equal	Side-Close-Disadvantaged	Side-Close-Equal
Number	6	27	3	23	2	28	2	40
Percentage	5%	21%	2%	18%	2%	21%	2%	31%

The chi-square test indicated significant differences in participants' selections across the eight spatial relationships ($\chi^2(7) = 94.65$, $p < 0.001$). The "side–close–equal" spatial relationship was selected most frequently (40 participants, 30.5%), whereas "side-far-disadvantaged," "side-close-disadvantaged," and "front-close-disadvantaged" were the least preferred (2-3 participants each, 1.5%-2.3%).

4.2 Analysis of Main Effects for Individual Dimensions

Further independence tests were conducted for each dimension:

4.2.1 Relative Orientation Dimension

The difference between selections for front-oriented (59 participants, 45.0%) and side-oriented (72 participants, 55.0%) interactions was not significant ($\chi^2(1) = 1.29$, $p > 0.05$). Thus, relative orientation had no significant effect on confession motivation.

4.2.2 Relative Distance Dimension

The difference between selections for far distance (63 participants, 48.1%) and close distance (68 participants, 51.9%) was not significant ($\chi^2(1) = 0.19$, $p > 0.05$). Therefore, relative distance had no significant effect on confession motivation.

4.2.3 Relative Height Dimension

The difference between selections for equal seating (118 participants, 90.1%) and suspect-disadvantaged seating (13 participants, 9.9%) was highly significant ($\chi^2(1) = 84.16$, $p < 0.001$). This indicates that relative height is a crucial factor influencing confession motivation, with equal seating significantly superior to disadvantaged seating.

4.3 Determination of Optimal Spatial Relationship Combinations

Considering both participant numbers and percentages, the four spatial relationships most conducive to confession motivation are ranked as follows:

1) Side-Close-Equal (40 participants, 30.5%): most effective;

2) Side-Far-Equal (28 participants, 21.4%): second-most effective;

3) Front-Far-Equal (27 participants, 20.6%): third-most effective;

4) Front-Close-Equal (23 participants, 17.6%): fourth-most effective.

The four spatial relationships characterised by suspect-disadvantaged seating were rarely selected (total of 13 participants, 9.9%), indicating their limited effectiveness in promoting confession motivation.

5. DISCUSSION

5.1 Optimal Effectiveness of the "Side-Close-Equal" Spatial Relationship

The "side-close-equal" spatial relationship received the highest selection rate (30.5%), a result explainable through three dimensions:

5.1.1 Respect Effect of Equal Seating

Equal seating fulfills suspects' esteem needs, generating positive emotional experiences from being respected. According to Maslow's hierarchy of needs, every individual possesses a need for esteem, which represents a higher-order requirement. Fulfillment of this need tends to evoke positive emotions. Within the specific context of interrogation, if suspects perceive that they are respected by interrogators, they are inclined to view interrogators as individuals with higher personal qualities and cultural attainments who genuinely consider suspects' interests. Consequently, suspects' trust in interrogators increases, enhancing their willingness to accept advice and confess. This humanised treatment aligns closely with suspects' subconscious desire for equality and respect, thus reducing psychological distance, enhancing interpersonal attraction, and improving persuasive effectiveness.

5.1.2 Security-Paradox Effect of Close Distance

Close proximity is typically perceived as an invasion of personal space, potentially causing anxiety. However, when combined with equal seating, the negative effect of proximity is mitigated. Based on the psychological closeness generated by equal seating, the effectiveness of interrogators' persuasion improves correspondingly. If equality fosters suspects' optimistic thoughts regarding escaping confession or punishment, the pressure induced by close distance counteracts this optimism. Simultaneously, close proximity addresses suspects' need for social security; in uncertain interrogation scenarios, forming emotional connections with interrogators can reduce fear and uncertainty. Social security is effectively established only after individuals develop positive interpersonal relationships, specifically, stable emotional connections and support.

5.1.3 De-Confrontational Effect of Side-Oriented Interaction

Side-oriented interaction avoids the psychological confrontation inherent in face-to-face seating, thus reducing defensiveness. Such an orientation facilitates communication in a natural, free, and calm atmosphere, enhancing psychological contact between interrogators and suspects while reducing suspects' resistance toward both interrogators and the interrogation context. Without direct visual scrutiny by interrogators, suspects experience less pressure of being "seen through," resulting in a more composed mindset. This spatial arrangement allows the confession process to resemble a "self-dialogue", diminishing confession barriers that arise from observing interrogators' reactions.

5.2 Effects of Other Equal-Seating Spatial Relationships

5.2.1 "Side-Far-Equal" and "Front-Far-Equal"

The selection rates for these two spatial relationships were 21.4% and 20.6%, respectively, indicating relatively

strong effects, although inferior to the "side-close-equal" condition. Far distance satisfies personal space needs and generates a sense of security and comfort; however, it may also induce feelings of detachment and hostile perceptions. Recent psychological studies indicate that different interpersonal distances create distinct communicative atmospheres, with larger distances more likely to foster hostile and mutually antagonistic environments. If suspects interpret far distance as indifference or hostility from interrogators, the equal-seating arrangement, due to its reduced authority, may be misinterpreted as a signal of "possible leniency", thereby hindering confession.

5.2.2 "Front-Close-Equal"

This combination showed a selection rate of 17.6%, indicating a comparatively weaker effect. Although face-to-face interaction facilitates information exchange and emotional recognition, it tends to intensify confrontation. Such seating arrangements can place both parties in an oppositional stance, activating defensive responses. When combined with close distance, this may create excessive pressure, leading suspects to adopt defensive refusal strategies. However, for suspects inclined to establish interpersonal closeness, the directness of face-to-face interaction may enhance trust and motivate confession as a means to alleviate psychological tension.

5.3 Ineffectiveness of "Suspect-Disadvantaged" Seating Arrangements

The four spatial relationships characterised by "suspect-disadvantaged" seating exhibited very low selection rates (9.9% in total), indicating that they are unfavourable for facilitating confession motivation within the current sample. This finding can be explained from a cultural psychology perspective. In the Chinese cultural context, seating arrangements carry social meanings related to hierarchy and status. Disadvantaged seating conveys clear signals of inequality, which may lead suspects to experience a lack of personal respect, thereby generating psychological resistance to confession. This negative experience, combined with the inherently coercive nature of interrogation, intensifies hostile emotions and further impedes confession. However, the boundary conditions of this finding should be noted. For suspects who are older, less educated, or more inclined to accept authority, disadvantaged seating may be perceived as normative, thereby weakening its negative effects. Additionally, for suspects motivated to mitigate culpability through confession, the enhanced authority conveyed by such seating arrangements may increase the perceived credibility of interrogators. In practical settings, suspects vary widely in age, educational level, and attitudes towards authority, and some may regard hierarchical seating differences as natural and acceptable.

5.4 Non-Significant Effects of Relative Distance and Relative Orientation

The main effects of relative distance and relative orientation were not significant, indicating that their independent influence on confession motivation is limited. This finding suggests that the psychological effects of distance and orientation may depend on moderation by the relative height dimension. When seating is equal, differences in distance and orientation are attenuated; when seating is unequal, variations in distance and orientation fail to produce positive effects on confession motivation. This supports the conclusion that relative height constitutes the core dimension of spatial relationships.

6. CONCLUSION

This study investigated the effects of eight spatial relationships between interrogators and suspects on confession motivation using a questionnaire survey, leading to the following conclusions:

First, spatial relationships between interrogators and suspects differed significantly in facilitating confession motivation. Spatial relationships characterised by equal seating were significantly more effective than those characterised by suspect-disadvantaged seating ($\chi^2(1) = 84.16$, $p < 0.001$), indicating that satisfying suspects' need for respect is a key psychological mechanism promoting confession.

Second, the "side-close-equal" spatial relationship demonstrated the strongest effect (30.5%) due to its simultaneous consideration of feelings of respect, security, and reduced confrontation, effectively eliminating confession barriers arising from negative emotions and opportunistic attitudes.

Third, the individual effects of relative distance and relative orientation on confession motivation were not significant, suggesting their psychological influence may be moderated by relative height.

Fourth, spatial relationships influence confession motivation through the mediating roles of emotional experience and interpersonal attraction. Equal and respectful spatial arrangements can shorten psychological distance and enhance persuasive effectiveness.

A limitation of this study is that the sample comprised only students from public security universities, whose professional orientation might influence the representativeness of the results. Future research should expand to include actual criminal suspects and investigate the interactive effects between individual characteristics (such as personality traits and criminal history) and spatial relationships. Additionally, combining experimental and case-study methods would facilitate an in-depth exploration of the dynamic processes underlying the impact of spatial relationships on confession motivation.

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