A Neuropsychological Examination of the Nature of Perceived Person–Environment Fit

By: Aichia Chuang, Yu-Ping Chen, Tsung-Ren Huang, Hsu-Min Lee

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Abstract:

This study provides a neuropsychological examination of the conceptualization of perceived person–environment fit in relation to its cognitive and affective components. It addresses key challenges in the current fit literature through empirically clarifying the theoretical "black box" of how individuals cognitively compare themselves to their environment, fundamentally examining affective aspects of fit beyond correlational analysis, and exploring whether psychological and neural perspectives offer different conceptualizations of fit. Two functional magnetic resonance imaging studies, involving 62 and 41 working adults respectively, show that both lateral brain regions (associated with higher order cognition) and medial brain regions (associated with emotion processing) are activated when participants perceive fit. In addition, relational fit involves more emotion processing compared to rational fit, while misfit involves greater negative emotion processing than fit. An unexpected and illuminating finding is that perceived fit also engages social cognitive processing, related to theory of mind. As an additional part of the examination of perceived fit conceptualization, supplementary research indicates that, compared to job satisfaction, perceived fit engages more social brain regions (associated with social cognition), while job satisfaction exhibits greater activation in prefrontal cortex regions (linked to motivation and goal attainment). A third study, using a field survey with text analysis to examine the psychological processes underlying perceived fit and job satisfaction, replicates all hypothesized neurological findings from the two functional magnetic resonance imaging studies. Theoretical and managerial implications, as well as directions for future research, are discussed.

Keywords: person–environment fit | job satisfaction | misfit | social cognition | organizational neuroscience

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A Neuropsychological Examination of the Nature of Perceived Person–Environment Fit

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This study provides a neuropsychological examination of the conceptualization of perceived person–environment fit in relation to its cognitive and affective components. It addresses key challenges in the current fit literature through empirically clarifying the theoretical “black box” of how individuals cognitively compare themselves to their environment, fundamentally examining affective aspects of fit beyond correlational analysis, and exploring whether psychological and neural perspectives offer different conceptualizations of fit. Two functional magnetic resonance imaging studies, involving 62 and 41 working adults respectively, show that both lateral brain regions (associated with higher order cognition) and medial brain regions (associated with emotion processing) are activated when participants perceive fit. In addition, relational fit involves more emotion processing compared to rational fit, while misfit involves greater negative emotion processing than fit. An unexpected and illuminating finding is that perceived fit also engages social cognitive processing, related to theory of mind. As an additional part of the examination of perceived fit conceptualization, supplementary research indicates that, compared to job satisfaction, perceived fit engages more social brain regions (associated with social cognition), while job satisfaction exhibits greater activation in prefrontal cortex regions (linked to motivation and goal attainment). A third study, using a field survey with text analysis to examine the psychological processes underlying perceived fit and job satisfaction, replicates all hypothesized neurological findings from the two functional magnetic resonance imaging studies. Theoretical and managerial implications, as well as directions for future research, are discussed.

Keywords: person–environment fit, job satisfaction, misfit, social cognition, organizational neuroscience

The concept of person–environment fit (PE fit) has been a central focus in organizational research for decades (A. L. Kristof-Brown et al., 2005). It is grounded in interactionist theory, with early works such as Lewin (1935) proposing that an individual’s interaction with their environment influences their experiences and outcomes. Over the past few decades, several major types of PE fit have been theorized (A. Kristof-Brown & Guay, 2011): person–job (PJ) fit (i.e., the compatibility between an individual and their job), person–organization (PO) fit (i.e., the compatibility between an individual and their organization), person–group (PG) fit (i.e., the compatibility between an individual and their workgroup), and person–supervisor (PS) fit (i.e., the compatibility between an

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individual and their supervisor). Meta-analytic research (A. L. Kristof-Brown et al., 2005; Oh et al., 2014) consistently shows that employees with higher levels of fit tend to exhibit several important individual and organizational outcomes, such as improved attitudes (e.g., job satisfaction, organizational commitment, and organizational identification), better career decisions, reduced strain, lower turnover intentions, and enhanced overall performance.

Despite the significant advancements in PE fit research, the field continues to seek a more refined conceptualization of fit (Chuang et al., 2015; A. Kristof-Brown et al., 2023). One ongoing area of investigation focuses on the meaning of perceived fit, which refers to an individual's perception of their compatibility with their environment. One key theme warranting further exploration involves around the cognitive and affective manifestations of perceived fit. While research has suggested or shown that perceived fit encompasses both cognitive and affective elements (Gabriel et al., 2014; Ostroff, 2012), it has primarily been studied through psychological lenses. Our research aims to enhance and further clarify this conceptualization of cognition and affect through a neuroscientific approach.

Research suggests that adopting an organizational neuroscience perspective by examining the human brain can enhance both the theoretical understanding and practical application of management (Ashkanasy et al., 2014). Bagozzi et al. (2013) stated that

> … experiences and behaviors of individuals and groups in organizations … are not only dependent on such underlying psychological concepts as personality or information processing but, in the end, fundamentally rest on lower-level brain systems that bring about psychological and social responses. (p. 1762)

This neurological approach allows scholars to better illuminate the nature and relationships of existing psychometric constructs (Dimoka, 2010) and investigate competing explanations for organizational phenomena (Dulebohn et al., 2016; Senior et al., 2011). In this research, we employ functional magnetic resonance imaging (fMRI) to explore the deep-level conceptualization of perceived fit.

Cognitive and Affective Components of Perceived PE Fit

The PE fit literature has made progress in suggesting that fit involves both cognitive and affective manifestations (Gabriel et al., 2014; Ostroff, 2012). However, research has never directly investigated the cognitive and affective nature of fit. Particularly, much of the belief regarding the cognitive processing of fit is based on theoretical assumptions that individuals cognitively compare elements of the environment with their own characteristics. As Edwards et al. (2006) aptly pointed out

> Studies that use the atomistic approach do not assess the cognitive comparison between perceived and desired job characteristics itself. Rather, they rest on the assumption that combining separate measures of perceived and desired job characteristics serves as a proxy for their cognitive comparison. (p. 806)

These authors further stated that

> A core premise of virtually all P-E fit theories is that the person and environment are subjectively compared to yield perceptions of P-E fit. However, this comparison process constitutes a theoretical black box that has been largely neglected, perhaps because the comparison is considered simple and straightforward. (p. 822)

This oversight calls for a systematic investigation to provide empirical evidence of actual cognitive processing by individuals. Second, in studies of the affective elements of fit, much of the literature focuses on correlates of the fit experience, such as how affect influences fit or how fit influences affect (Gabriel et al., 2014; Vleugels et al., 2018; Yu, 2009). However, this approach differs from investigating the fundamental nature of fit experiences.

Third, most fit research has relied on psychological surveys that measure participants' past fit experiences subjectively. Adopting a neural approach allows researchers to capture real-time cognitive and affective processing in the brain to triangulate or uncover differences from behavioral findings. This exploration is possible, because neuroscientific research has shown that behavioral and neural investigations may lead to different conclusions. McRae et al. (2008) found that while gender differences were not evident in participants' emotional responses to negatively valenced pictures in behavioral settings, such differences emerged in specific brain areas during neural examinations. In the context of PE fit, this means when the psychological literature suggests that perceived fit involves cognitive and emotional components, neural investigations might reveal unexpected findings. These insights may provide an opportunity for researchers to reconsider the conceptualization of perceived fit and reexamine its key antecedents and consequences, enriching and complementing current theoretical, empirical, and practical understandings of fit.

Finally, our research can help determine whether the cognitive and affective elements are weighted differently across various types of fit—a distinction not yet fully explored in the current psychological literature. This investigation has managerial implications. For example, in team management, if the goal is to foster greater harmony within a team, management could benefit from assembling a team with an emphasis on fit types more closely associated with affective processing (e.g., PG fit and PS fit).

Our present study aims to address the conceptualization of perceived fit by adopting two widely studied typologies that provide higher order conceptualizations of perceived fit. One typology distinguishes between relational fit and rational fit (Oh et al., 2014). This categorization rests on the theoretical assertion that PG fit and PS fit pertain to the relational, interpersonal, and affective dimensions of work, whereas PJ fit and PO fit relate to the rational, impersonal, and cognitive dimensions of work (Oh et al., 2014). Therefore, these conceptualizations of fit are likely to inform the affective versus cognitive consideration. Another typology contrasts fit with misfit (Cooper-Thomas & Wright, 2013). Perceived misfit has been conceptualized to encompass cognitive assessment (Englert et al., 2023) and linked to emotional outcomes such as depression, anxiety, stress, resentment, and fatigue (Vogel et al., 2020; Williamson & Perumal, 2021). By using these multiple typologies, we shed light on whether the cognitive and affective associations are universal or specific to particular typology.

Our study makes significant contributions to PE fit research in several ways. First, through a deep-level investigation from a neural perspective, we aim to empirically clarify the theoretical "black box" of how individuals cognitively compare themselves to their environment (Edwards et al., 2006). It can also fundamentally investigate the affective aspects of fit beyond correlational analysis. We draw on the systematic brain organization provided by O'Reilly (2010) and Salehinejad et al. (2021), which suggest that lateral brain regions are primarily involved in "cold," cognitive processing, while medial brain regions are associated with "hot," emotion processing.

By applying these theories, we can map the brain areas related to fit and their corresponding processing functions. The neuroscientific investigation also enables us to identify potential differences in the weighting of cognitive and affective elements.

In addition, this study contributes to the understanding of the conceptualization of perceived fit by adopting a task-based neuroscientific approach. Organizational researchers have integrated principles from neuroscience with organizational theory to uncover the neural mechanisms underlying various aspects of organizational behavior (Becker et al., 2011), such as leadership (Peterson et al., 2008; Waldman et al., 2011, 2018), teamwork (Lu et al., 2022), justice (Dulebohn et al., 2016), trust (Dimoka, 2010), and communication (Nozawa et al., 2016). Many of these studies have employed resting-state methods to examine trait-like information derived from brain activity (e.g., Balthazard et al., 2012; Waldman et al., 2017, 2018). In contrast, our study utilizes a task-based approach with fMRI, where participants read experimental stimulus scripts. Task-based methods are specifically designed to test hypotheses about which brain regions are involved in particular tasks and they help mitigate the effects of inter-individual differences by focusing on intra-individual variability (i.e., changes in a person's brain activity in response to specific task demands). This approach enables us to uncover the automatic mental processes underlying experienced fit, positioning our article as the first to apply a neuroscientific perspective to understanding PE fit.

Theory and Hypothesis

Since Oh et al. (2014) introduced the concepts of relational fit and rational fit, research has been drawing on these concepts to advance a host of related theoretical developments and implications (e.g., Astakhova, 2016; Chuang et al., 2016). Research has demonstrated that relational fit and rational fit are distinguishable both at the conceptual and empirical levels. At the conceptual level, relational fit captures the interactions between an individual and the people they work with, specifically team members (PG fit) and supervisors (PS fit). It engages human interplays that involve interpersonal constructs such as emotion recognition and regulation (Oh et al., 2014). On the other hand, rational fit focuses on the match between an individual and their job (PJ fit) and organization (PO fit). It entails aspects of the work environment that are less personal, including job characteristics, personal competencies, organizational values, and organizational goals (Oh et al., 2014). Empirically, meta-analytical results by Oh et al. (2014) indicated that in East Asia, where collectivism and the interdependent self are highly valued (House et al., 2004), relational fit was more effective in predicting outcomes compared to North America, where individualism and the independent self tend to be highly valued. Conversely, the effect of rational fit was stronger in North America than in East Asia.

In relation to fit and misfit, there are various conceptualizations of these constructs (Englert et al., 2023). For instance, they have been proposed to represent opposite ends of a continuum (Wheeler et al., 2007). They have also been suggested to be qualitatively distinct dimensions (Tanner et al., 2017; Wang et al., 2020) or to reflect the degree to which misfit is either exceeding or falling short of fit (Cooper-Thomas & Wright, 2013). However, thus far, the more commonly adopted operationalization has been that they are two poles of the same dimension, with misfit being the opposite of fit (Krumm et al., 2013; Vogel et al., 2020; Zhao et al., 2022).

We draw on the social information processing theory (Salancik & Pfeffer, 1978) to explain the cognitive process of perceived fit. This theory describes how individuals process and respond to environmental situations by "cognitively evaluating the dimensions of the job or task environment" (p. 230). In the context of PE fit, cognitive processes may involve how individuals perceive and interpret social information in their environment, such as whether work values align with their personal values or if job tasks match their competencies. Fit research suggests that understanding the experience of fit requires individuals to engage in a cognitive assessment process, where they describe themselves in relation to the environment and evaluate their compatibility with it (Ostroff, 2012). A. L. Kristof-Brown et al. (2005) noted that "Perceived fit allows the greatest level of cognitive manipulation because the assessment is all done in the head of the respondents …" (p. 291). Empirical research has also shown that individuals remain aware of their alignment or misalignment with the environment over time as they reflect on the current situation (Jansen & Shipp, 2019). Since this comparative reasoning requires a high level of effortful control (Diamond, 2013), it can be inferred that the experience of fit perceptions is inherently cognitive.

Research on fit has also highlighted the role of affective assessment. The affective events theory (Weiss & Cropanzano, 1996) provides a potential framework for understanding the affective processes underlying fit perception. This theory encompasses appraisal about social information and describes how "… specific cues from the environment and the person are evaluated and discrete emotional responses elicited" (p. 33). Hence, affective events theory provides insights into how workplace events, such as interpersonal interactions or comparisons between individual and environmental characteristics, can elicit emotional responses that, in turn, are likely to influence an individual's perception of fit. The fit literature has shown that interactions with people at work, especially supervisors and team members, can evoke emotional responses such as enjoyment, satisfaction, frustration, anger, and sadness, which can be intertwined with a sense of fit when individuals contemplate it (Chuang et al., 2015; E. H. Follmer et al., 2018). Additionally, research suggests that the perception of misfit is associated with affective outcomes such as depression, anxiety, stress, resentment, and fatigue (Vogel et al., 2020; Williamson & Perumal, 2021). The preceding arguments suggest that individuals experiencing any form of fit may engage in both cognitive and emotional brain processing.

We also draw on neuroscientific theories regarding functional organization of these brain processes. O'Reilly (2010) and Salehinejad et al. (2021) distinguished between "cold" and "hot" brain functions—two types of processes involved in the brain's regulation of thoughts, actions, and emotions. These functions are typically differentiated based on whether they are used in purely cognitive situations (cold) or emotionally charged situations (hot). Cold functions involve logical reasoning, problem-solving, and planning, and are generally associated with tasks requiring working memory, cognitive flexibility, and inhibitory control. Hot functions, on the other hand, are involved in managing emotional responses and making decisions in emotionally intense situations. These functions activate different areas of the brain, with cognitive processing primarily associated with the lateral brain regions (e.g., the lateral prefrontal cortex) and emotion processing primarily associated with the medial brain regions (e.g., the medial prefrontal cortex). Thus, we posit the following:

Hypothesis 1: Individuals show activation in brain regions relating to cognitive processing (e.g., lateral brain areas) and emotion processing (e.g., medial brain areas) when they perceive (a) relational fit and (b) rational fit.

Hypothesis 2: Individuals show activation in brain regions relating to cognitive processing (e.g., lateral brain areas) and emotion processing (e.g., medial brain areas) when they perceive (a) fit and (b) misfit.

However, the fact that relational fit entails a greater emphasis on interpersonal interactions compared to rational fit (Oh et al., 2014) indicates that relational fit is likely to engage more brain activity associated with emotion processing than rational fit. Behavioral theories that are used to describe the dynamics of PG fit and PS fit typically revolve around similarity and interactions between individuals. For example, the interpersonal attraction theory (Huston & Levinger, 1978) suggests that individuals are drawn to others based on shared attributes, such as goals, values, and preferences. Similar individuals tend to have a higher degree of interpersonal liking, better communication and social cohesion (Schaubroeck & Lam, 2002; Seong et al., 2015) which implies that relational fit is likely to be strongly associated with emotion processing in individuals' brains.

On the other hand, rational fit is likely to be less associated with emotion processing. This is because, for PJ fit, most of the theories involved (e.g., complementarity-based view, Muchinsky & Monahan, 1987; need fulfillment paradigm, French & Kahn, 1962) are about compatibility between a person's job competence and what the job requires or between a person's needs and what the job can offer (Edwards, 1991). Although the dimensions may involve people-oriented characteristics such as personality, PJ fit mainly focuses on the attributes required by the job, rather than those of others at work. Likewise, in the case of PO fit, individuals compare their personal attributes with those at the institutional level. Although some attributes of PO fit, such as values, overlap with those defined in relational fit, there is reason to believe that the emotional involvement in these organizational elements (e.g., top management) differs from that in group- or individual-level interactions. As a result, compared to relational fit, this identification and interaction are more distant and less immediate. Thus, we propose

Hypothesis 3: Individuals show greater activation in brain regions relating to emotion processing (e.g., medial brain areas) when they perceive relational fit than when they perceive rational fit.

We further posit that misfit triggers more negative emotion processing than fit. Research on negativity bias suggests that negative events have a more significant impact on an individual's psychological state and processes than neutral or positive events (Rozin & Royzman, 2001). Studies have demonstrated that individuals experience negative emotions/events with greater intensity than positive emotions/events (Kensinger, 2007). Additionally, a consistent body of research reveals that individuals tend to express a wider range of emotions in response to negative situations/events in comparison to positive ones (Taylor, 1991). In terms of fit, research has indicated that individuals do not consistently recognize when they fit well, but they do contemplate their alignment with the environment when they experience misfit (i.e., tight shoes; Jansen & Shipp, 2019). Related, research about misfit has found it to be salient and painful (E. H. Follmer et al., 2018). In terms of the neural profile of negative emotion, a meta-analysis regarding the functional localization of discrete basic emotions shows that these emotions are associated with distinct regional brain activation patterns (Vytal & Hamann, 2010). For example, negative emotions are related to such regions as the medial frontal gyrus, inferior frontal gyrus, caudate, and insula. The study also reveals that, compared to activation associated with happiness, negative emotions such as sadness, anger, and fear elicit greater activation in regions including the middle temporal gyrus, inferior frontal gyrus, and amygdala. Based on these findings, we propose the following hypothesis:

Hypothesis 4: Individuals show greater activation in brain regions relating to negative emotion processing (e.g., medial frontal gyrus, inferior frontal gyrus, caudate, insula, middle temporal gyrus, and amygdala), when they perceive misfit than when they perceive fit.

Overview of Studies, Transparency, and Openness

To test Hypotheses 1–4, we conducted two neurological studies using fMRI and one field survey incorporating text analysis. Study 1 examined the neurological representation of relational and rational fit (and their differences) as well as fit and misfit (and their differences). Study 2 aimed to replicate the findings from Study 1. Study 3 used open-ended questions in a field survey. It analyzed participants' written descriptions of their experiences with fit at work to assess whether the psychological processes observed aligned with the neurological patterns identified in Studies 1 and 2.

All three studies were conducted at National Taiwan University in Taiwan and were approved by its research ethics committee (201706HM030: An innovative approach to organizational behavior research: Exploring the neural patterns of person–environment fit; 202305HS133: Personal management toward well-being). In accordance with the methodological checklist recommended by the *Journal of Applied Psychology*, we provided details on our sample, data exclusions, manipulations, and measurements where applicable. All data, codes, and research materials are available upon request. Additional results for Studies 1 and 2, along with supplementary research, are available in the additional online material at the Open Science Framework (https://osf.io/be3qz/?view_only=07b7859a60e9454393 9eeaa3e6bd240d). Data were analyzed using SPM12 (Penny et al., 2011), *MATLAB* (2021), and IBM SPSS Statistics (Version 29). The design and analysis of the studies were not preregistered.

Study 1

Study 1: Method

Participants and Overall Study Procedure

To investigate our hypotheses using fMRI, we recruited a sample of 65 right-handed participants in Taiwan, all of whom were native Mandarin speakers and had a minimum of 1 year of work experience. For recruiting practices, our research team followed typical methods used in neuroscientific studies (Falk et al., 2016; Waldman et al., 2017) to adopt institutional recruitment (e.g., class announcements to graduate and executive MBA students), online public advertisements (e.g., social media platforms and university bulletin boards), and snowball sampling (e.g., leveraging personal connections). Volunteers who showed initial interest were screened for safety and magnetic resonance imaging (MRI) compatibility. Specifically, volunteers with any history of neurological disease, claustrophobia, or irremovable metallic items on their bodies (e.g., implantable cardioverter defibrillators or dental prostheses) were excluded.

We employed fMRI to examine participants' brain activity and four surveys to assess their psychological attributes. We excluded three subjects from the study due to their excessive head movements (>3 mm) during MRI scans. Data collected from the 62 subjects (37 women; $M_{\text{age}} = 28.08$ years, $SD = 4.28$) were included in the subsequent analyses. The participants held a variety of jobs (e.g., sales manager, research & development engineer, project assistant, human resources associate, and marketing analyst) in different industries (e.g., electronics, consumer products, catering, finance, and construction). Each participant received a cash payment of 3,500 New Taiwan Dollars (approximately U.S.$115).[1]

The Psychological Surveys

At Time 1 (1 week before participants' MRI scan), personal and work information was collected to customize the MRI stimulus scripts. At Time 2 (1 day before the lab visit), we collected participants' demographics and information for construct validation of the scripts. At Time 3 (immediately after the scan), participants were instructed to complete a survey containing manipulation check items. At Time 4 (1 week after the lab visit), participants' current PE fit perceptions at work were measured (for construct validation of the scripts). The measures adopted are described in each corresponding section (i.e., stimulus scripts, manipulation checks, and construct validation).

The Brain Scanning Session

Overall Procedure. We utilized an MRI machine to scan participants' brains. Before the scans, we provided participants with a detailed explanation of the scanning process, including the approximate duration for each step. Subsequently, participants underwent an fMRI session lasting approximately 30 min. During this session, they engaged in a passive viewing task involving the reading of 40 short stories. Participants were instructed to take the first-person perspective when reading the stories, assuming they were the "I" (the first-person narrator) in each story. Participants were reminded that all stories were unrelated to one another.[2]

fMRI Procedure. In this study, we used task-based fMRI to investigate participants' brain responses to scenarios involving relational fit, rational fit, fit, and misfit. Our experimental design included four runs of stimuli, comprising a total of 40 stories or scripts. Each run presented 10 randomly ordered stories visually on a display within the scanner, with each story displayed for 25 s. After reading each story, participants provided responses to three manipulation check items using Likert scales. The order of these items was randomized, and we allowed participants to respond at their own pace by pressing a button. An inter-trial interval ranging from 3 to 7 s was implemented between each story, randomly assigned to prevent anticipation and optimize efficiency. Figure 1 illustrates the experimental design for a story and the subsequent manipulation check items presented during the scanning session.

The Stimulus Scripts. In the MRI machine, participants were presented with personalized stimulus scripts addressing their fit with their job, organization, group, and supervisor, as well as additional filler stories unrelated to fit. We developed nine types of stories: PJ fit, PJ misfit, PO fit, PO misfit, PG fit, PG misfit, PS fit, PS misfit, and filler stories. Each story had a similar length of approximately 110 Mandarin characters. The 10 stories in each run of stimuli included one fit story and one misfit story of the same fit type for each of the four fit categories, along with two filler stories. The total number of fit-related stories for an MRI session was 32 and that for filler stories was eight, totaling 40 stories.

To craft the fit-related stories, we used the content dimensions for each type of fit as described in Chuang et al.'s (2016) Perceived Person–Environment Fit Scale. This scale was chosen, because it includes the four types of fit examined in our research and provides multiple content dimensions for each type, ensuring greater content validity for the MRI scripts. To ensure that participants adopted a first-person perspective when reading these stories, we tailored the narratives using personalized information about the content dimensions collected from each participant during the Time 1 Survey. Appendix contains eight fit-related stories, exemplifying the experience of a specific participant employed as a human resources associate in the financial industry, along with two filler stories.

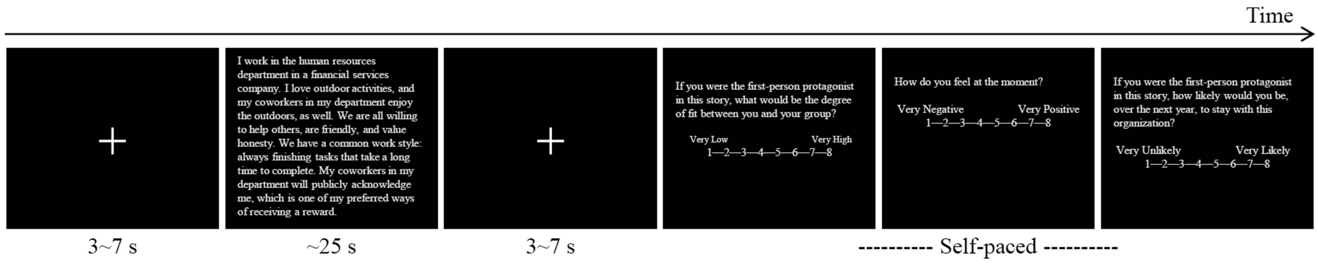
With respect to the stories' content dimensions (Chuang et al., 2016), for PJ fit, we focused on job characteristics, knowledge/skills/abilities, job interests, and personality; for PO fit, we focused on values and goals; for PG fit, we focused on values, goals, and attributes; and for PS fit, we focused on personality, work style, lifestyle, values, and leadership style.

We collected information on each participant's knowledge/skills/abilities, personality (Goldberg, 1999), values (Ravlin & Meglino, 1987), work style (P. H. Bayl-Smith & Griffin, 2015), and lifestyle (e.g., Lio & Cheng, 2006) to assess their individual characteristics. For example, personality was measured using Goldberg's (1999) Big Five framework, which evaluated participants' levels of conscientiousness, agreeableness, extraversion, openness, and neuroticism. Participants who scored higher than 4.0 (on a scale of 1 = "*very inaccurate*" to 8 = "*very accurate*") for any personality type were considered to possess that personality trait, and this information was used in writing their PJ fit stories. We also gathered information on participants' preferred job characteristics (Hackman & Oldham, 1976), occupational interests (Holland, 1996), goal orientation (van Vianen, 2000), and leadership style (Avolio et al., 1995). For example, regarding leadership style, participants were provided with descriptions of the eight dimensions from the Multifactor Leadership Questionnaire (Avolio et al., 1995), which include idealized influence, inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management by exception—active, management by exception—passive, and laissez-faire. They were then asked to choose their four (so that each run featured a different leadership style) most preferred leadership styles.

[1] This amount is comparable to what is paid for similar MRI studies in Taiwan, which includes compensation for participants' travel expenses and lost wages due to the 3-hr lab visit.

[2] For fMRI data acquisition, we used a Siemens 3 T MAGNETOM Prisma scanner to collect high-resolution structural T1-weighted MRI data ($0.93 \times 0.93 \times 0.93$ mm^3) and task-based fMRI data, employing an echo-planar-imaging sequence with the following parameters: 39 slices; repetition time, 2,000 ms; echo time, 25 ms; field of view, 192×192 mm^2; flip angle, 90°; voxel size, $3 \times 3 \times 3$ mm^3. Each of the four task-based runs lasted for approximately 7 min, totaling approximately 30 min for each research participant.

Figure 1
Experimental Design (Study 1)



The information collected to construct the dimensions of fit allowed us to write stories tailored to each participant. For example, we used participants' professional knowledge/skills/abilities to describe whether they matched the requirements of their job (PJ fit). Another example involved integrating each participant's preferred leadership style into stories that described a leader who either exhibited or failed to exhibit that style (PS fit). In addition to fit stories, we designed filler stories that provided neutral information. These filler stories were intended to prevent participants from assuming each story was about fit, maintain their attention, and serve as the comparison group for brain imaging. A sample filler story might describe the geographical location and architectural layout of a hypothetical company's office. Finally, we ensured the comprehensibility and realism of the fit scripts (additional online Appendix A at https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d) and verified their construct validity (additional online Appendix B at https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d).

Manipulation Checks and First-Person Perspective Check

For this study, we designed three manipulation checks (i.e., to test whether participants could recognize the specific type of fit they read, whether they could differentiate between fit and misfit stories, and whether they could distinguish between fit-related vs. filler stories) and one first-person perspective check. The procedures and results are provided in additional online Appendix C (https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d). Results show that all checks were met.

Analysis Strategy

To test Hypotheses 1a, 1b, 2a, 2b, 3, and 4, we conducted fMRI data analyses using the statistical parametric mapping software package (SPM12; Penny et al., 2011) in *MATLAB* (2021). Prior to analysis, we subjected the functional images to standard preprocessing steps: slice timing correction, realignment, coregistration, normalization, and smoothing (Ashburner et al., 2016).

For investigating significant hemodynamic changes associated with each story type, we utilized a general linear model with an event-related analysis procedure. Each participant had two general linear models estimated: (1) to identify brain regions responding differentially to relational and rational stories for testing Hypotheses 1a, 1b, and 3, and (2) to identify brain regions responding differently to fit and misfit stories for testing Hypotheses 2a, 2b, and 4. Each model's time-varying regressors were constructed from experimental condition periods convolved with a hemodynamic response function in the brain. Specifically, the first model considered relational fit stories (PG fit, PG misfit, PS fit, and PS misfit), rational fit stories (PJ fit, PJ misfit, PO fit, and PO misfit), and filler stories. The second model examined fit stories (PJ fit, PO fit, PG fit, and PS fit), misfit stories (PJ misfit, PO misfit, PG misfit, and PS misfit), and filler stories. To account for question-answering responses, an additional regressor modeled the entire period in which participants answered the three manipulation check items.

We analyzed differences in brain activities related to the two sets of three-story types (relational, rational, and filler; fit, misfit, and filler) separately. Parameter estimates from first-level contrasts were aggregated into second-level random-effect analyses. This allowed statistical determination of activation differences in brain regions corresponding to the contrast of interest. Specifically, for Hypothesis 1a, we contrasted brain region activation during relational-story readings with activation during filler-story readings.[3] Similarly, for Hypothesis 1b, we contrasted brain region activation during rational-story readings with activation during filler-story readings. For Hypothesis 3, we contrasted brain region activation during relational-story readings with activation during rational-story readings.[4] For Hypothesis 2a, we contrasted fit stories with filler stories. For Hypothesis 2b, we contrasted misfit stories with filler stories. For Hypothesis 4, we contrasted fit stories with misfit stories. For analysis with the manipulation checks and first-person perspective check, we use IBM SPSS Statistics (Version 29).

Study 1: Results

Table 1 shows the identified brain regions and their locations organized by hypothesis. For all tests, $p < .05$ corrected for family-wise error rate (FWER). Hypothesis 1 proposed that brain regions

[3] In cognitive neuroscience, when identifying brain regions that become active in research subjects experiencing stimuli, researchers commonly compare the regions activated by one type of stimulus to those activated during exposure to neutral stimuli (Takahashi et al., 2004). This comparison helps reveal theoretically hypothesized brain regions that correspond to the stimuli's specific processing, rather than simply engaging in activities like reading the stimuli.

[4] In cognitive neuroscience, researchers investigating differences in brain activity commonly compare the brain activation patterns associated with different types of stimuli (e.g., Takahashi et al., 2004). For instance, Takahashi et al. explored the neural substrates linked to the evaluative processes of moral emotions. They devised sentences to elicit feelings of guilt, embarrassment, and neutral scenarios (e.g., an example sentence for embarrassment was "I noticed that the zipper of my pants was open."). The researchers discovered that guilt and embarrassment scenarios activated overlapping brain regions, with the embarrassment condition showing stronger activation in some of these common areas compared to the guilt condition.

Table 1
Brain Regions Identified for Hypotheses 1–4 Across Studies 1 and 2

Study 1: Brain region	Brain coordinate: [X Y Z][a]	Lateral/medial/social[b]	Study 2: Brain region	Brain coordinate: [X Y Z][a]	Lateral/medial/social[b]
Hypothesis 1a: Relational fit					
Posterior cingulate cortex	[−4 −24 28]	Medial/social	Posterior cingulate cortex	[4 −22 34]	Medial/social
Precuneus	[−10 −68 36]	Medial/social	Precuneus	[−10 −62 34]	Medial/social
Superior frontal gyrus	[−8 28 62]	Medial/social	Superior frontal gyrus	[8 58 30]	Medial/social
Bilateral temporoparietal junction	[52 −56 36] [−60 −54 30]	Lateral/social	Bilateral temporoparietal junction	[54 −56 32] [−52 −56 34]	Lateral/social
Bilateral superior temporal sulcus	[48 −36 −4] [−54 −24 −6]	Lateral/social	Bilateral superior temporal sulcus	[46 −32 −4] [−48 −28 −12]	Lateral/social
Bilateral temporal pole	[50 8 −26] [−50 12 −22]	Lateral/social	Bilateral temporal pole	[48 12 −28] [−52 10 −22]	Lateral/social
Bilateral middle frontal gyrus	[42 26 36] [−38 56 8]	Lateral	Inferior frontal gyrus[c]	[48 26 −10]	Lateral
Anterior cingulate cortex	[−8 32 28]	Medial			
Bilateral inferior frontal gyrus[c]	[40 26 −10] [−40 26 −6]	Lateral			
Hypothesis 1b: Rational fit					
Posterior cingulate cortex	[6 −36 24]	Medial/social	Posterior cingulate cortex	[2 −22 32]	Medial/social
Precuneus	[12 −66 34]	Medial/social	Precuneus	[−12 −68 34]	Medial/social
Superior frontal gyrus	[−6 56 38]	Medial/social	Superior frontal gyrus	[8 58 32]	Medial/social
Bilateral temporoparietal junction	[50 −52 44] [−60 −54 32]	Lateral/social	Bilateral temporoparietal junction	[58 −58 34] [−52 −58 36]	Lateral/social
Bilateral superior temporal sulcus	[62 −24 −10] [−50 −30 −6]	Lateral/social	Bilateral superior temporal sulcus	[48 −34 −2] [−48 −32 −8]	Lateral/social
Temporal pole	[−50 10 −24]	Lateral/social	Inferior frontal gyrus[c]	[48 26 −10]	Lateral
Bilateral middle frontal gyrus	[38 50 0] [−36 48 6]	Lateral			
Bilateral inferior frontal gyrus[c]	[44 32 0] [−38 24 −6]	Lateral			
Hypothesis 2a: Fit					
Posterior cingulate cortex	[−4 −22 28]	Medial/social	Posterior cingulate cortex	[4 −22 34]	Medial/social
Precuneus	[−10 −70 36]	Medial/social	Precuneus	[12 −60 32]	Medial/social
Superior frontal gyrus	[−10 24 60]	Medial/social	Superior frontal gyrus	[8 58 30]	Medial/social
Temporoparietal junction	[−60 −54 32]	Lateral/social	Bilateral superior temporal sulcus	[−46 −30 −6] [46 −32 −4]	Lateral/social
Medial frontal gyrus	[6 38 44]	Medial/social			
Temporal pole	[−50 12 −24]	Lateral/social	Temporoparietal junction	[−54 −56 32]	Lateral/social
Bilateral middle frontal gyrus	[40 46 −2] [−38 50 8]	Lateral			
Anterior cingulate cortex	[−10 34 28]	Medial			
Bilateral inferior frontal gyrus[c]	[44 32 2] [−46 16 0]	Lateral			
Bilateral inferior parietal lobule[c]	[46 −48 42] [−46 −58 50]	Lateral			
Hypothesis 2b: Misfit					
Posterior cingulate cortex	[−2 −24 28]	Medial/social	Posterior cingulate cortex	[2 −22 34]	Medial/social
Precuneus	[−10 −70 36]	Medial/social	Precuneus	[−12 −66 34]	Medial/social
Superior frontal gyrus	[−8 28 60]	Medial/social	Superior frontal gyrus	[−8 20 64]	Medial/social
Bilateral temporoparietal junction	[62 −52 26] [−58 −52 30]	Lateral/social	Bilateral temporoparietal junction	[56 −56 32] [−52 −56 34]	Lateral/social

(*table continues*)

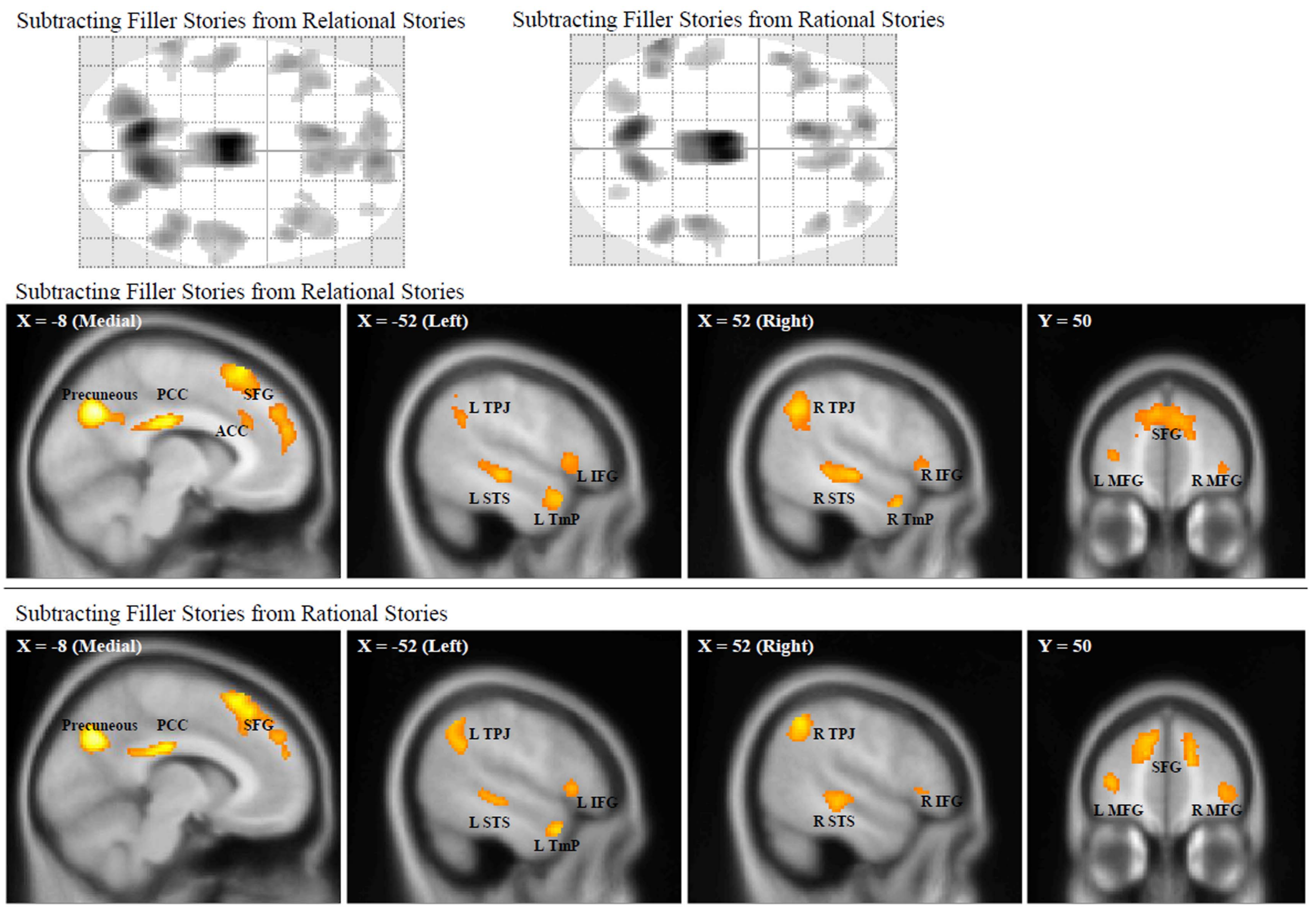
Table 1 (*continued*)

Study 1: Brain region	Brain coordinate: [X Y Z][a]	Lateral/medial/social[b]	Study 2: Brain region	Brain coordinate: [X Y Z][a]	Lateral/medial/social[b]
Bilateral superior temporal sulcus	[50 −24 −4] [−52 −24 −6]	Lateral/social	Bilateral superior temporal sulcus	[48 −30 −4] [−60 −24 −6]	Lateral/social
Bilateral temporal pole	[52 10 −26] [−50 12 −22]	Lateral/social	Bilateral temporal pole	[48 12 −28] [−52 10 −22]	Lateral/social
Bilateral middle frontal gyrus	[40 20 40] [−34 56 8]	Lateral	Bilateral middle frontal gyrus	[40 20 40] [−40 8 56]	Lateral
Bilateral inferior frontal gyrus[c]	[44 30 0] [−38 22 −10]	Lateral	Bilateral inferior frontal gyrus[c]	[48 26 −8] [−40 24 −8]	Lateral
			Caudate	[12 12 14]	Medial
Hypothesis 3: Relational fit compared to rational fit					
Precuneus	[6 −60 36]	Medial/social	*Medial frontal gyrus*	[4 56 −12]	Medial/social
Right temporoparietal junction	[48 −56 18]	Lateral/social	Bilateral temporoparietal junction	[50 −54 18] [−46 −54 16]	Lateral/social
			Bilateral superior temporal sulcus	[52 −4 −18] [−52 −2 −22]	Lateral/social
			Bilateral temporal pole	[40 18 −22] [−40 16 −20]	Lateral/social
Hypothesis 4: Misfit compared to fit					
Bilateral superior temporal sulcus	[50 −32 −2] [−50 −36 0]	Lateral/social	Bilateral superior temporal sulcus	[44 −32 4] [−52 −40 2]	Lateral/social
Bilateral temporal pole	[50 12 −26] [−50 10 −22]	Lateral/social	Temporal pole	[−50 14 −26]	Lateral/social
			Superior frontal gyrus	[−6 54 30]	Medial/social
			Bilateral temporoparietal junction	[58 −56 36] [−48 −58 26]	Lateral/social
			Middle frontal gyrus	[−36 8 52]	Lateral
			Inferior frontal gyrus[c]	[−40 26 −6]	Lateral
			Caudate	[−14 6 12]	Medial

Note. Brain regions not replicated across the studies are italicized.
[a] *x*-axis represents the left-to-right position in the brain; *y*-axis represents the front-to-back position; *z*-axis represents the top-to-bottom position. [b] The concepts of "lateral" and "medial" are based on the structural organization of brain areas as indicated by O'Reilly (2010) and Salehinejad et al. (2021). "Lateral" refers to parts of the brain that primarily involve cognitive processing, while "medial" refers to those that primarily involve emotion processing. The notation "lateral" or "medial" in this column indicates the specific brain part based on the coordinate of the peak activation in the identified regions. The term "social" refers to the "social brain network" described by Adolphs (2009) and Mars et al. (2012), denoting brain regions involved in social cognitive processing. It is important to note that the human brain is capable of multiplexing, managing, and integrating multiple functions or processes simultaneously by using shared neural resources (Herlin et al., 2021; O'Reilly, 2010). The implication of multiplexing for the notation in this table is that within a single brain area (e.g., the temporoparietal junction), different subareas may support different functions (e.g., emotion and social). [c] Memory- or language-related brain areas that were activated as participants understood the meaning of words, became immersed in the stories, and recalled personal experiences from memory. These brain areas are less theoretically relevant to perceived fit but reported for completeness.

Figure 2

Brain Regions Showing Activities for Perceived Relational Fit and Perceived Rational Fit (Hypotheses 1a and 1b; Study 1)



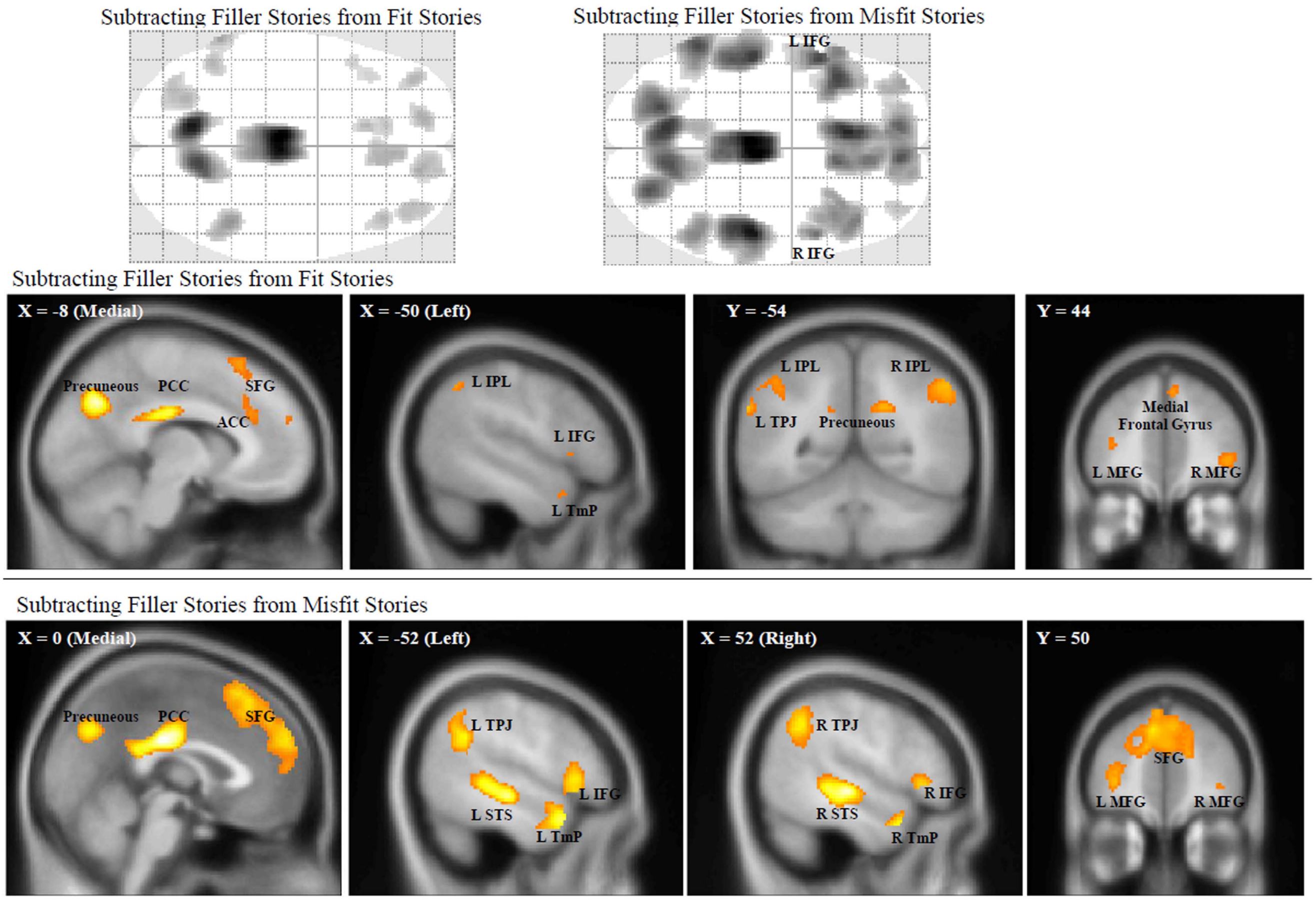
Note. L = left; R = right; ACC = anterior cingulate cortex; IFG = inferior frontal gyrus; PCC = posterior cingulate cortex; SFG = superior frontal gyrus; STS = superior temporal sulcus; MFG = middle frontal gyrus; TmP = temporal pole; TPJ = temporoparietal junction. See the online article for the color version of this figure.

linked to cognitive and emotion processing would be active in individuals perceiving (a) relational fit and (b) rational fit. The overall results indicate that participants' brain activation patterns were similar for both relational fit and rational fit contexts (Figure 2). Specifically, activated brain regions responsible for cognitive processing (lateral regions; O'Reilly, 2010; Salehinejad et al., 2021) compared to reading filler stories included such areas as the bilateral temporoparietal junction, bilateral superior temporal sulcus, bilateral temporal pole, and bilateral middle frontal gyrus.[5] The major brain regions activated due to emotion processing (medial regions; O'Reilly, 2010; Salehinejad et al., 2021) compared to reading filler stories included such areas as the posterior cingulate cortex, precuneus, and superior frontal gyrus. Thus, Hypotheses 1a and 1b received support, as both relational and rational fit engaged brain regions associated with cognitive and emotion processing. However, it is noteworthy that our results also suggest signs of social cognitive processing (Table 1), an aspect not explicitly posited in Hypothesis 1. Following the neuroscientific theorization of the social brain by Adolphs (2009) and Mars et al. (2012), some brain areas identified for Hypothesis 1 also process social cognition, including such areas as the bilateral temporoparietal junction, bilateral superior temporal sulcus, bilateral temporal pole, and posterior cingulate cortex.

Hypothesis 2 suggested that brain regions related to cognitive and emotional processing would be active when individuals perceive (a) fit and (b) misfit. Results indicate that participants exhibited similar brain activity while reading both fit and misfit stories (Figure 3). Key brain regions involved in cognitive processing (lateral regions) that were activated included the bilateral temporoparietal junction, bilateral superior temporal sulcus, bilateral temporal pole, and bilateral middle frontal gyrus. For emotion processing (medial regions), significant activation was observed in the posterior cingulate cortex, precuneus, superior frontal gyrus, and medial frontal gyrus. Hence, Hypotheses 2a and 2b were supported, as both fit and misfit engaged brain regions associated with cognitive and emotion processing. The results in

[5] Choosing to discuss only major brain areas that are theoretically related to the constructs under investigation is a common practice in neuroscience, as illustrated by region-of-interest analyses in fMRI studies (Poldrack, 2007).

Figure 3
Brain Regions Showing Activities for Perceived Fit and Perceived Misfit (Hypotheses 2a and 2b; Study 1)



Note. L = left; R = right; ACC = anterior cingulate cortex; IFG = inferior frontal gyrus; IPL = inferior parietal lobule; PCC = posterior cingulate cortex; SFG = superior frontal gyrus; STS = superior temporal sulcus; MFG = middle frontal gyrus; TmP = temporal pole; TPJ = temporoparietal junction. See the online article for the color version of this figure.

Table 1 also indicate that several of the identified brain areas are part of the social brain network.

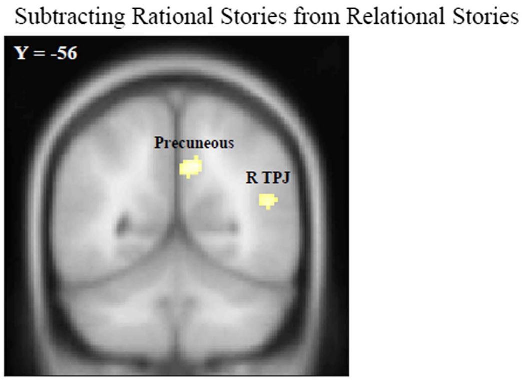
Across relational fit, rational fit, fit, and misfit narratives, we identified consistent patterns of brain activity linked to cognitive, emotion, and social cognitive processing. These findings suggested a shared neural representation for the perception of fit, regardless of the specific types of fit. Subsequently, we explored distinctions arising from perceiving different types of fit.

Hypothesis 3 predicted greater activation of brain regions related to emotional processes in individuals perceiving relational fit than in those perceiving rational fit. Results reveal that the precuneus and right temporoparietal junction exhibited greater activation for relational stories than for rational stories (Figure 4). For the precuneus, Ochsner et al. (2004) demonstrated that the precuneus was activated when participants judged individuals' emotional state. Tesli et al. (2015) also showed that precuneus is important in normal functions such as the recognition of emotional faces over neutral objects. The temporoparietal junction mainly involves social cognition (Adolphs, 2009; Mars et al., 2012). Thus, Hypothesis 3 was supported in that relational fit elicited more emotion processing brain activity than rational fit. However, it also appears that relational fit exhibited more activation of social cognitive processing than rational fit which was not an aspect of our hypothesis. No voxels survived the $p < .05$ threshold (FWER corrected) when comparing rational to relational stories. That is, when we subtracted the activated brain regions for the relational fit stories from those for the rational fit stories, no activated brain regions unique to rational fit stories were observed.

Hypothesis 4 predicted that individuals would exhibit greater activation in brain regions related to negative emotion processing when perceiving misfit compared to fit. Results show that the bilateral superior temporal sulcus and bilateral temporal poles exhibited greater activation for misfit stories than for fit stories (Figure 5). Although these areas do not correspond to the negative emotion areas suggested in Vytal and Hamann (2010) by their exact names, they are nonetheless located next to or functionally connected with some of these negative emotion areas such as the middle temporal gyrus, inferior frontal gyrus, and amygdala or insula (Chabardès et al., 2002). In fact, empirically, both superior temporal sulcus (Fourie et al., 2014; Liebenthal et al., 2014) and temporal pole (Kumfor et al., 2013; Olson et al., 2007) have been shown to

Figure 4

Brain Regions Showing Greater Activities for Perceived Relational Fit Than for Perceived Rational Fit (Hypothesis 3; Study 1)



Note. TPJ = temporoparietal junction. See the online article for the color version of this figure.

associate with negative emotions in other studies. In addition to emotion processing, studies show that both the superior temporal sulcus and temporal poles are associated with social cognitive processing (Adolphs, 2009; Mars et al., 2012; Moessnang et al., 2017). Thus, Hypothesis 4 was supported, although the findings also indicate social cognition. No activated brain regions were found when subtracting activated brain regions for misfit stories from those for fit stories.

Study 1: Discussion

Based on insights from the behavioral fit literature, we initially posited that perceived fit involved both cognitive and emotion processing. Our neural findings clarify that when individuals experience fit, in addition to comparing elements or reacting emotionally, they are likely engaging in understanding, interpreting, and responding to social information. This aspect of social cognitive processing has not been a primary focus in the fit literature. In Study 2, we aim to replicate the findings from Study 1.

Study 2

Study 2: Method

Participants and Overall Study Procedure

We recruited 43 right-handed participants from Taiwan, all of whom were native Mandarin speakers with at least 1 year of work experience. The recruiting methods used were identical to those adopted in Study 1. fMRI was used to monitor participants' brain activity, complemented by three surveys to assess their psychological traits. Due to excessive head movement (>3 mm) during MRI scans, two participants were excluded, leaving data from 41 individuals (21 women; M_{age} = 30.56 years, SD = 4.63) for analysis. The participants came from a variety of occupations and industry, similar to those in Study 1. Each participant received 2,500 New Taiwan Dollars (roughly U.S.$80) as compensation.

The Psychological Surveys

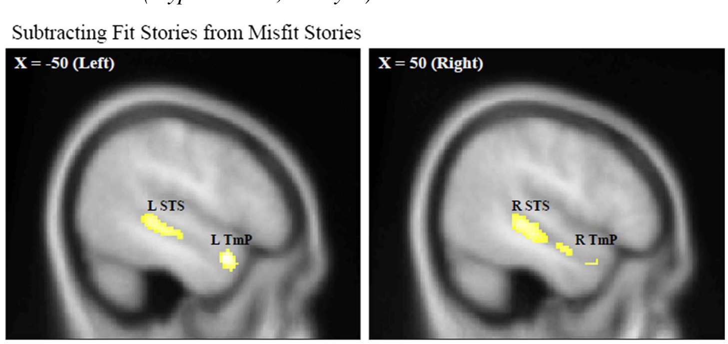
At Time 1 (1 week prior to participants' MRI scan), personal and work information was collected to customize the stimulus scripts. At Time 2 (1 day before the lab visit), participants' demographic information was measured for construct validation of the scripts. At Time 3 (following the MRI scan), participants completed a survey with manipulation check items.

The Brain Scanning Session and the Scripts

The overall session procedure mirrored that used in Study 1. In the fMRI phase, task-based fMRI was again employed to assess participants' brain activity in response to scenarios involving relational fit, rational fit, general fit, and misfit. The experimental design consisted of four runs of stimuli presented in random order, amounting to a total of 40 scripts. Each run included 10 scripts (containing eight fit scripts and two filler scripts), with each script shown for 12 s. After each script, participants answered two manipulation check questions, presented in random order. To minimize anticipation effects and enhance efficiency, a randomly assigned inter-trial interval ranging from 2 to 6 s was applied

Figure 5

Brain Regions Showing Greater Activities for Perceived Misfit Than for Perceived Fit (Hypothesis 4; Study 1)



Note. L = left; R = right; STS = superior temporal sulcus; TmP = temporal pole. See the online article for the color version of this figure.

between scripts. Each script was approximately 50 Mandarin characters long, reduced from 110 characters to accommodate the larger number of stimuli[6] while keeping the total duration of the experiment similar. To prepare the stories, we followed the same procedures as in Study 1.

Manipulation Checks and First-Person Perspective Check

For this study, we again designed three manipulation checks and one first-person perspective check. The design was identical to that in Study 1. The procedures and results are available in additional online Appendix D (https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d). All checks were satisfied.

Analysis Strategy

To test the hypotheses, we followed the same fMRI data analysis procedures used in Study 1. In this study, we used the false discovery rate (FDR) approach to correct for multiple comparisons, given the smaller sample size ($n = 41$) compared to Study 1 ($n = 62$), where the FWER correction was applied. Using FWER at the same significance level would have reduced statistical power. The FDR correction allowed us to maintain sensitivity while minimizing power loss (Genovese et al., 2002; Han & Glenn, 2018).

Study 2: Results

Hypothesis Testing

Table 1 presents the identified brain regions and their locations for Study 2. It is important to note that Study 2 does not intend to be an exact replication of Study 1 due to the larger number of scripts and the shorter length of each fit script. Besides, the statistical controlling methods used are different (i.e., FWER in Study 1 and FDR in Study 2). Therefore, a direct comparison between the studies is not possible, and thus some differences are expected (Greene et al., 2001; Yokum et al., 2021). However, the results from both studies are highly similar regarding the locations and functions of the identified brain regions. For all tests, $p < .05$.

For Hypothesis 1a, results indicate that brain regions linked to cognitive and emotion processing were active in individuals perceiving relational fit (Figure 6). The specific brain regions identified are very similar to those in Study 1, except the bilateral middle frontal gyrus and anterior cingulate cortex did not sustain in Study 2. Thus, Hypothesis 1a receives close replication to show that relational fit engaged brain regions associated with cognitive and emotion processing. Similar to our finding in Study 1, it is noteworthy that our results also suggest signs of social cognitive processing.

For Hypothesis 1b, all the prominent brain regions that were activated when participants read rational fit stories in Study 1 were also activated in Study 2, except for some areas such as the temporal pole and bilateral middle frontal gyrus, which were less robust and thus did not sustain in Study 2 (Figure 6). As with what was implicated in the results of Hypothesis 1b in Study 1, the identified regions are associated with cognitive, emotion, and social cognitive processing. Thus, the findings of Hypothesis 1b closely replicated those in Study 1 and were thus supportive of Hypothesis 1b.

For Hypothesis 2a, Study 2 replicates most of the brain regions identified in Hypothesis 2a in Study 1, except for areas such as the temporal pole, bilateral middle frontal gyrus, and anterior cingulate cortex (Figure 7). Hypothesis 2a was supported, as perceived fit engaged brain regions associated with cognitive and emotion processing. These results also indicate the presence of social cognitive processing.

For Hypothesis 2b, all brain regions that activated in Study 1 also activated in Study 2, except Study 2 found Caudate (Figure 7). Thus, Study 2 results highly replicate those in Study 1 to reflect cognitive, emotion, and social cognitive processing. Hypothesis 2b was thus supported in that perceived misfit engaged in brain areas that process cognitive and emotion information.

For Hypothesis 3, the right temporoparietal junction which activated under the comparison of relational versus rational fit in Study 1 sustained in Study 2 (Figure 8). However, the precuneus did not sustain. Besides, we found additional areas such as the medial frontal gyrus, bilateral superior temporal sulcus, and bilateral temporal pole that combined involve emotion and social cognitive processing. Thus, Hypothesis 3 was supported; relational fit elicited more emotion processing brain activity than rational fit, while social cognition was also present. No voxels survived the $p < .05$ threshold (FDR), when we subtracted the activated brain regions for the relational fit stories from those for the rational fit stories.

Hypothesis 4 predicted that individuals show greater activation in brain regions relating to negative emotion processing when they perceive misfit than when they perceive fit. Results show that three brain areas that are implicated in negative emotion processing were more active for misfit than for fit: the temporal pole (Kumfor et al., 2013; Olson et al., 2007), inferior frontal gyrus (Vytal & Hamann, 2010), and caudate (Vytal & Hamann, 2010), supporting Hypothesis 4 (Figure 9). The two areas found in Study 1 (i.e., the bilateral superior temporal sulcus and bilateral temporal pole) were replicated in Study 2, but Study 2 also finds more brain areas (e.g., superior frontal gyrus, bilateral temporoparietal junction, and middle frontal gyrus) including social cognition areas. No activated brain regions were found when subtracting activated brain regions for misfit stories from those for fit stories.

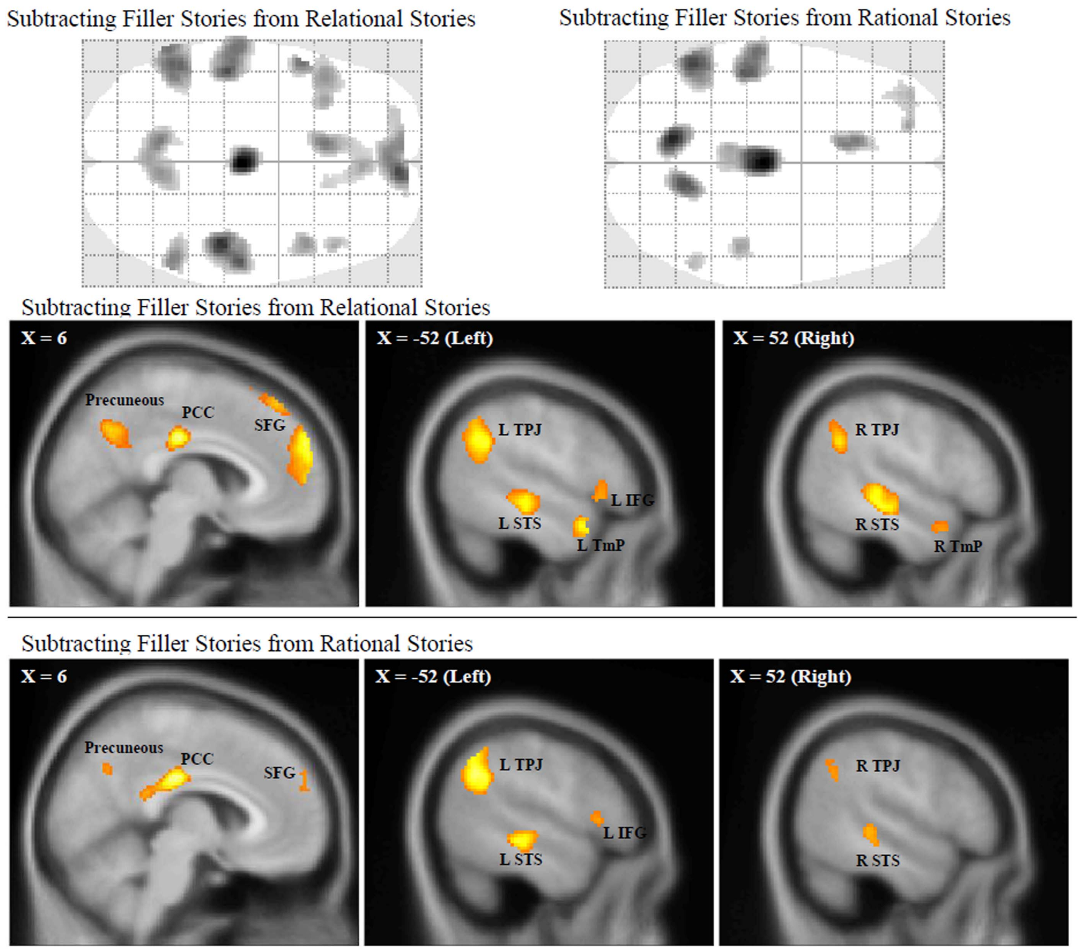
Additional Analysis

Table 1 shows that brain regions related to cognitive processes, such as the middle frontal gyrus (Li et al., 2013), showed greater activation for misfit than for fit. This finding was not part of the theoretical expectation about misfit versus fit, but it is one that deserves attention. Further investigation finds that, in the MRI session, when participants evaluated the psychological question regarding their level of fit after they read the fit stories, their response time was significantly longer for misfit stories than for fit stories (Study 1: $response\ time_{\text{misfit}} = 3.40$ s, $response\ time_{\text{fit}} = 2.84$ s, $t = 6.36$, $p < .001$; Study 2: $response\ time_{\text{misfit}} = 4.13$ s, $response\ time_{\text{fit}} = 3.28$ s, $t = 5.72$, $p < .001$), suggesting that perceiving misfit was likely more cognitively demanding (De

[6] The total number of scripts increased to accommodate stories for job satisfaction used in the supplementary research, which is described below and the additional online material (https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d).

Figure 6

Brain Regions Showing Activities for Perceived Relational Fit and Perceived Rational Fit (Hypotheses 1a and 1b; Study 2)



Note. L = left; R = right; IFG = inferior frontal gyrus; PCC = posterior cingulate cortex; SFG = superior frontal gyrus; STS = superior temporal sulcus; TmP = temporal pole; TPJ = temporoparietal junction. See the online article for the color version of this figure.

Boeck & Jeon, 2019). Similarly, in Study 3, participants were found to have used more language related to cognitive processes when describing misfit than fit ($M_{\text{misfit}} = 5.21$, $M_{\text{fit}} = 4.59$, $t = 12.91$, $p < .05$). To summarize, our findings provide preliminary evidence about cognitive effort of misfit versus fit based on neural correlates, response times, and text analysis.

Study 2: Discussion

Study 2 replicates all the hypotheses regarding relational and rational fit as well as fit and misfit, posited in Study 1. This validates that fit involves both cognitive and emotional processing as well as social cognitive processing. It also confirms that relational fit is more emotional than rational fit, and that misfit is perceived more negatively than fit. To triangulate the fMRI findings with psychological processes, we conducted a text analysis study (Study 3) to examine individuals' written narratives describing their mental processing of PE fit experiences. Text analysis is well-suited for identifying themes and words that reflect patterns of mental processing.[7]

Study 3

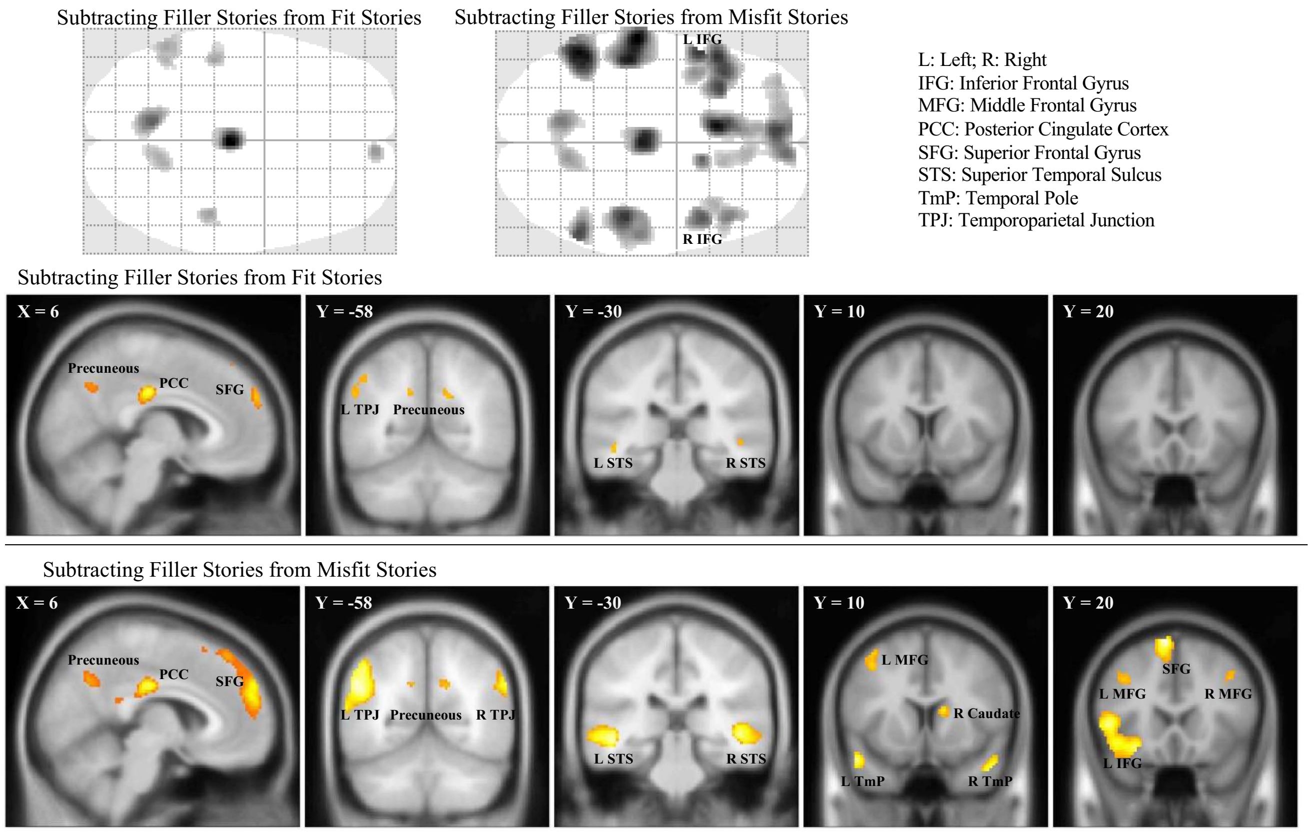
Study 3: Method

Sample and Procedure

Participants were recruited through a professional online survey platform, Rakuten Insight, in Taiwan. This company connects researchers with a diverse pool of subjects, similar to Prolific. To ensure that study results are compared based on individuals with similar backgrounds across studies, participants were prescreened to

[7] We thank an anonymous reviewer for suggesting that we conduct a behavioral survey for triangulation purposes. In cases where triangulation is needed, organizational neuroscientific research often pairs fMRI studies with traditional methods to strengthen findings (Bagozzi et al., 2013; Dimoka, 2010).

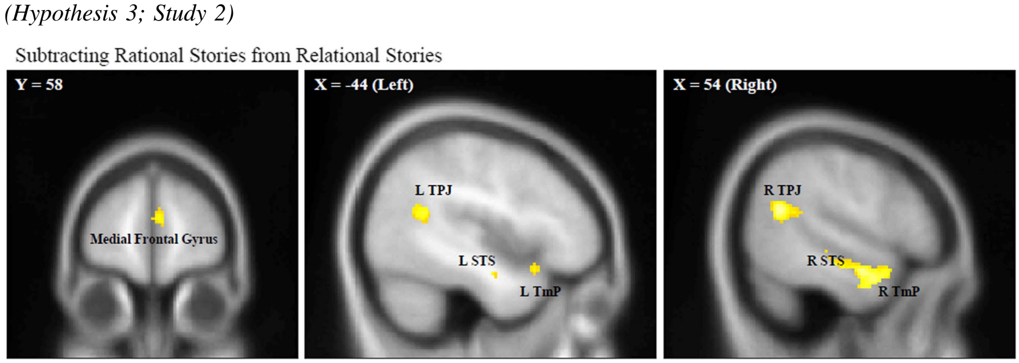
Figure 7
Brain Regions Showing Activities for Perceived Fit and Perceived Misfit (Hypotheses 2a and 2b; Study 2)



Note. L = left; R = right; IFG = inferior frontal gyrus; MFG = middle frontal gyrus; PCC = posterior cingulate cortex; SFG = superior frontal gyrus; STS = superior temporal sulcus; TmP = temporal pole; TPJ = temporoparietal junction. See the online article for the color version of this figure.

match the demographics of Studies 1 and 2 participants. Specifically, they had to be full-time employees with at least 1 year of employment, have a college degree or higher, be right-handed, and have Mandarin as their native language. Participants responded to eight open-ended questions describing their experiences with PE fit at work. A total of 368 participants met the prescreening criteria and completed the surveys. Three experts evaluated the open-ended responses for validity: two authors from the research team with expertise in PE fit

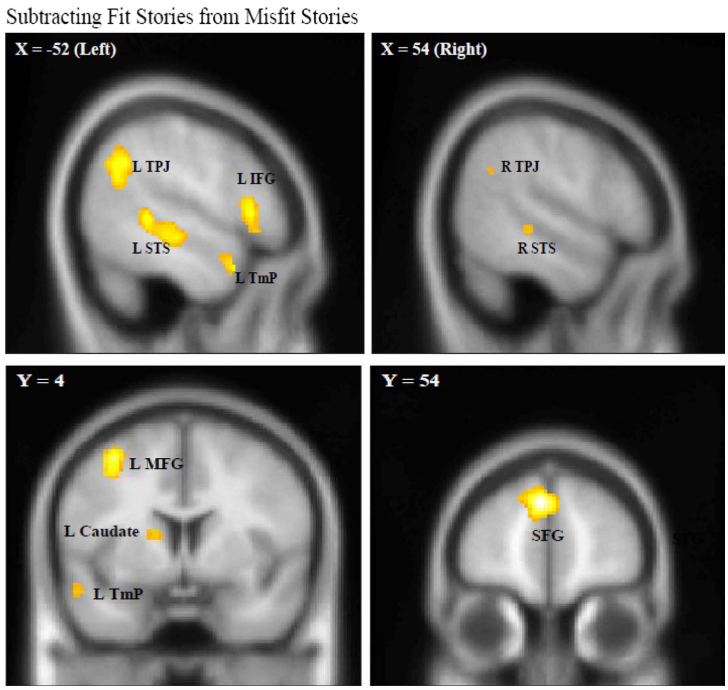
Figure 8
Brain Regions Showing Greater Activities for Perceived Relational Fit Than for Perceived Rational Fit (Hypothesis 3; Study 2)



Note. L = left; R = right; STS = superior temporal sulcus; TmP = temporal pole; TPJ = temporoparietal junction. See the online article for the color version of this figure.

Figure 9

Brain Regions Showing Greater Activities for Perceived Misfit Than for Perceived Fit (Hypothesis 4; Study 2)



Note. L = left; R = right; IFG = inferior frontal gyrus; MFG = middle frontal gyrus; SFG = superior frontal gyrus; STS = superior temporal sulcus; TmP = temporal pole; TPJ = temporoparietal junction. See the online article for the color version of this figure.

and job attitudes, and a research associate from the survey platform company experienced in identifying participants' survey-taking motivation, who was unaware of the study's research questions. As a result, 42 participants were removed due to responses that lacked additional information (e.g., "I fit," "Satisfied," "None"), contained nonsensical language (e.g., filler words or sentences) or consisted of duplicated content (e.g., copying and pasting previous answers). The final usable sample consisted of 326 participants. Forty-three percent of them were males with an average age of 31.57 years old ($SD = 4.81$). The participants were from a broad range of jobs (e.g., administration, marketing associate, human resource management, information technology research and design, and sales).

Research Design and the Linguistic Inquiry and Word Count for Text Analysis

For each of the four types of fit, participants were asked to recall, evaluate, and then describe their fit and misfit experiences in writing. Below is an example prompt for PS fit.

> Please assess and describe your compatibility with your immediate supervisor. To assist with your recall, consider specific incidents that have occurred between you and your supervisor. Note that it is not uncommon for employees to experience both fit and misfit with their supervisors. Please provide a written account of at least 60 words of your fit with your supervisor, followed by another account of at least 60 words of any misfits. When writing, please try to provide the following information: "An incident about the fit or misfit." "What happened?" "What was the cause?" and "What was the consequence for you?" Please provide these accounts in narrative form and refrain from using bullet points. Should you perceive a strong fit (or misfit) with your supervisor and instances of misfit (or fit) to be minimal, please still provide a brief description of these minor misfits (or fits).

To identify the linguistic content of the texts, Linguistic Inquiry and Word Count, which has been widely adopted in industrial and organizational psychology (Moore et al., 2017), was used. It counts the number of construct-specific words used in the participants' text and calculates the percentage of words that corresponds to each specific construct. Higher counts suggest a greater likelihood that a particular construct was discussed in the text. Linguistic Inquiry and Word Count was validated across six large collections of data (i.e., personal blogs, expressive writing, novels, natural speech, New York Times, and Twitter) and found to be valid and reliable across hundreds of studies (Pennebaker et al., 2015). This tool was used in our study to test what psychological constructs/processing were used when employees thought of work experiences of PE fit.

Analysis Strategy

In this research, we used Linguistic Inquiry and Word Count 2015 for Mandarin (Pennebaker et al., 2015), the latest available tool for Mandarin text analysis. We identified a set of word categories to test our hypotheses. For Hypotheses 1a, 1b, 2a, and 2b, we analyzed the percentage of "cognitive processes" words (e.g., "know" and "think") and "affective processes" words (e.g., "happy" and "sad") in the texts on relational fit, rational fit, fit, and misfit. For Hypothesis 3, we compared the percentage of "affective processes" words between texts on relational fit and rational fit. For Hypothesis 4, we compared the percentage of "negative affect" words (e.g., "hurt" and "nasty") between fit and misfit texts.

Additionally, we tested the replication of unexpected findings from Studies 1 and 2 (e.g., social cognitive processing for Hypotheses 1–4). A one-sample *t* test was used to test Hypotheses 1 and 2, while a paired *t* test was used for Hypotheses 3 and 4. For robustness, we conducted hypothesis testing under three data conditions, including participants who wrote at least 10, 20, or 50 words in the scenario being compared (e.g., descriptions of relational fit). Given the exploratory nature of our research, we used a significance threshold of $p < .10$.

Study 3: Results

We report the results using participants who provided at least 50 written words for each scenario.[8] Hypothesis 1 predicted that perceived (a) relational fit and (b) rational fit each involved cognitive and emotional processing. Results show that the percentage of words of "cognitive processes" ($M = 23.66$, $p < .05$, $n = 158$) and "affective processes" ($M = 11.00$, $p < .05$, $n = 158$) for relational texts was each significantly larger than zero. Thus, Hypotheses 1a and 1b were both supported. Results also replicate the unexpected finding regarding "social processing" ($M = 11.89$, $p < .05$, $n = 158$). Results for rational fit were also significant across the processes ("cognitive processes," $M = 20.61$, $p < .05$, $n = 171$; "affective processes," $M = 9.69$, $p < .05$, $n = 171$; "social processes," $M = 7.55$, $p < .05$, $n = 171$). Furthermore, results for Hypotheses 2a and 2b were supported. Specifically, the percentage of words of "cognitive processes" ($M_{\text{fit}} = 18.80$, $p < .05$, $n = 165$; $M_{\text{misfit}} = 25.30$, $p < .05$, $n = 164$), "affective processes" ($M_{\text{fit}} = 9.99$, $p < .05$, $n = 165$; $M_{\text{misfit}} = 10.41$, $p < .05$, $n = 164$), and "social processes" ($M_{\text{fit}} = 10.80$, $p < .05$, $n = 165$; $M_{\text{misfit}} = 9.75$, $p < .05$, $n = 164$) was each significantly larger than zero.

Hypothesis 3 predicted that perceived relational fit involved more emotion processing than rational fit. The test reveals that the percentage of "affective processes" words used in relational fit texts was significantly larger than that in rational fit texts ($M_{\text{relational}} = 10.64$ and $M_{\text{rational}} = 9.70$, $p < .05$, $n = 150$). Hence, Hypothesis 3 was supported. Social processing was also found to be more prevailing in relational fit than in rational fit texts ($M_{\text{relational}} = 11.95$ and $M_{\text{rational}} = 8.74$, $p < .05$, $n = 150$). Hypothesis 4 posited that perceived misfit engaged in more negative emotion processing than fit. This hypothesis was supported ("negative affect" words; $M_{\text{misfit}} = 5.49$ and $M_{\text{fit}} = 2.30$, $p < .05$, $n = 155$). However, "social process" words were mentioned more frequently for fit compared to misfit ($M_{\text{misfit}} = 9.85$ and $M_{\text{fit}} = 10.81$, $p < .05$, $n = 155$) which contradicts with our findings in Studies 1 and 2.[9]

Study 3: Discussion

Study 3 found that the cognitive, emotion, and social cognitive brain processes associated with perceived fit were replicated by their equivalent psychological processes. The study also highlighted the comparative presence of these psychological processes across different types of fit. To conclude, the successful triangulation across three studies using neuroscientific and psychological methods significantly enhances confidence in our understanding of perceived fit.

Supplementary Research

We believe that addressing the conceptualization challenges of any construct necessitates a comprehensive examination of both its defining characteristics and its distinctions from related constructs (Gao et al., 2024; Ng, 2015; Pierce et al., 1989). Using Studies 1–3, we have examined the former and showed that perceived fit has cognitive, affective and social processing. In this section and the additional online material (https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d), we report an examination regarding perceived fit's neural distinctiveness in relation to job attitudes, using job satisfaction as an example.

The PE fit literature indicates that perceived fit shares some empirical affinity with job attitudes such as job satisfaction and organizational commitment (Edwards et al., 2006; A. L. Kristof-Brown et al., 2005; Oh et al., 2014). Conceptually, fit theory posits that positive outcomes emerge, when there is congruence between individual and environmental characteristics (De Cooman & Vleugels, 2022). This theoretical foundation overlaps considerably with how job attitudes are conceptualized, as both frameworks emphasize the psychological evaluation of work experiences and the alignment between what employees desire and what the environment provides (Locke, 1976). Empirically, meta-analytic evidence has demonstrated substantial relationships between different types of PE fit and various job attitudes (A. L. Kristof-Brown et al., 2005; Oh et al., 2014), supporting this conceptual affinity. Unfortunately, research on the relationship between perceived fit and job attitudes has primarily been approached from psychological perspectives. Therefore, the goal of this supplementary research is to further clarify this relationship through a neural examination. This examination can also offer significant practical contribution because while current psychometric tools are effective for assessing employee perceptions and attitudes, if more nuanced neural differences between these constructs are discovered, they could help identify employees' deep-level feelings and states that may not be reflected in psychological ratings. This would enable managers to tailor employee development more precisely, rather than applying the same strategies to all employees in relation to fit and attitudes.

Using the design and data set from Study 2 (an fMRI study) and Study 3 (a behavioral text analysis), we find that perceived fit involves more social processing than job satisfaction, while job satisfaction involves more cognitive processing (e.g., achievement and goal attainment) than perceived fit. For detailed accounts

[8] Results using participants with at least 10 or 20 written words yield identical results (in terms of significance) to those reported here, showing robustness of our findings. Results are available upon request.

[9] To further delineate this finding, we attempted to use the category of "third person pronoun" words (e.g., "they" and "she") that could be considered an alternative to capturing social cognition to test this hypothesis. Results show that participants used third person pronouns more frequently when describing misfit than fit scenarios ($M_{\text{misfit}} = 0.48$ and $M_{\text{fit}} = 0.33$, $p < .05$, $n = 155$). We thus retested all inquiries (i.e., Hypotheses 1–4) involving social processing using these words and found that results are all significant in the expected direction.

regarding the examination's motivation, research questions, method, results, and discussion, refer to the additional online material at the Open Science Framework (https://osf.io/be3qz/?view_only=07b7859a60e94543939eeaa3e6bd240d).

General Discussion

This research sheds light on the nature of perceived PE fit based on the perspectives of neuroscience and mental processing and has several novel and important findings. It finds that perceived fit engages cognitive, emotion, and social cognitive processes and that relational fit involves more emotion processing than rational fit, and misfit involves more negative emotion processing than fit. This set of finding is interesting because although the current fit literature asserts that perceived fit possesses both cognition and affect, the examination is mostly done with theoretical arguments or by finding correlates of perceived fit. The social cognitive aspect offers a valuable perspective for advancing the field, because it suggests that fit is not merely static but involves complex social interpretations between the person and the environment.

Theoretical Contributions

Cognitive and Emotion Processing

Our neurological investigation shows that in two typologies of PE fit experiences (i.e., relational vs. rational fit and fit vs. misfit), individuals engage in both cognitive and emotion processes. This finding expands on the current behavioral literature, as we empirically demonstrate these processes occurring in the brain when individuals perceive fit. Thus, our research helps clarify the "black box" of cognitive comparison (Edwards et al., 2006), as reflected by the activation of lateral brain regions associated with higher order executive functions, such as decision-making (Friedman & Robbins, 2022; Stuss, 2011), evaluating environmental demands, and assessing personal capacities. Based on these findings, individuals likely compare and evaluate various aspects of the person–environment dynamic before determining their fit. For example, if an employee observes that their supervisor avoids full honesty with clients, they may assess whether this behavior aligns with their own values. If they determine that it does not, this evaluation may lead to a perception of misfit.

Our research also extends the current literature by moving beyond identifying affective correlates of perceived fit to exploring emotional processing in the brain. We find that several medial brain regions, which process affects and emotional relevance, activate when individuals perceive fit. Processing of emotional relevance refers to the brain's ability to determine how emotionally significant or important a particular stimulus, event, or experience is to an individual. This process helps us prioritize our attention and emotional response. Building on the example of misalignment in honesty between an employee and their supervisor, once the employee recognizes that their supervisor's approach conflicts with their value of honesty, they may experience emotional reactions such as frustration and uneasiness. Their brain processes the emotional significance of this misalignment, contributing to a sense of misfit. Thus, our findings add to the existing literature by confirming that emotion processing occurs in the brain before psychological measures capture these emotions to assess their correlation with fit.

This research further shows that relational fit (compared to rational fit) is more strongly associated with the activation of brain regions related to emotion processing. This finding is meaningful because it confirms the psychological definition of relational fit, which singles this construct out as being more related to interpersonal interactions and emotional relevance than rational fit is. With this finding, future research may investigate whether interventions aimed at enhancing emotion-related capability have a greater impact on improving relational fit, given its strong link to emotion processing. This investigation can be especially helpful for team management in relation to staffing, development and team dynamics.

Last, this study finds that misfit, compared to fit, is associated with greater brain activation in regions related to negative emotion and social cognition. This finding is theoretically significant, as misfit has received less attention in the broader PE fit literature, and the field is still seeking a clear conceptualization of the concept (Cooper-Thomas & Wright, 2013; Sun & Billsberry, 2024). Although previous research has shown that misfit correlates with negative affective reactions (Billsberry et al., 2023), our study takes a step back to examine the mental representation of individuals' experiences of misalignment. The social cognition aspect is novel. Because misfit represents a state where individuals face challenges within their environment, it is understandable that they may be motivated to understand both their own and others' thoughts, intentions, and behaviors in order to adapt and restore equilibrium.

In general, these findings regarding differential weights of neural processing speak to the possibility that in human brains, fit dimensions operate at various levels even though they involve similar functions.

Social Cognitive Processing

Our study also finds evidence of the interaction between person and environment at a more social level: individuals adopt social understanding processing when experiencing fit. This is an advanced and critical theoretical discovery because of the following reasons. First, theory of mind, as a major theory underlying social cognition, allows one to attribute thoughts, desires, and intentions to others, to predict or explain their actions, and to posit their intentions. This newfound evidence is both theoretically and practically meaningful because what is inside the black box, which was once considered straightforward (Edwards et al., 2006), might be the social cognition. Consider a specific type of fit—for instance, when psychological measures assess work style fit (e.g., "My supervisor and I are both workaholics")—researchers still do not fully understand what occurs in individuals' brains during this assessment. Our study addresses this puzzle and suggests that part of the cognitive process may involve attributing the supervisor's late nights at work to their work style (which fosters a sense of work style fit) rather than to an effort to impress top managers (which does not contribute to a sense of work style fit). Understanding these deep-level responses is crucial, as it can help foster a better fit between an individual and their environment. Equally important is the finding implies that psychological assessments are likely valid. When participants are prompted to reflect on their fit, they may deliberately evaluate the interaction between themselves and their environment rather than relying solely on surface level or affective reactions.

Second, the finding of social cognitive processing in addition to cognitive and affective processing suggests a possibility for the fit experience to be shaped by the interplay of these elements. Consider the following scenario: Our finding reveals that individuals cognitively compare characteristics (e.g., "My supervisor and I are both introverts.") and affectively process the fit experience (e.g., "While I am generally content that my supervisor and I are both introverted, I was unhappy when he did not support me in that company meeting due to his introverted disposition."). The social cognition further suggests that individuals may also engage in understanding, reasoning, and predicting the other party's thoughts and behaviors (e.g., "While I did not feel supported in the meeting, I understand my supervisor's introversion likely made him uncomfortable voicing his thoughts in that situation, so I am okay with it."). This example describes a situation when cognitive comparison results in a perception of match, but an emotional reaction tied to the comparison characteristic is negative. Social cognition then helps the individual reason through the situation, potentially reducing the negative emotion and restoring a sense of fit. The example demonstrates that the actual experience of fit may be more complex than a simple comparison between the person and the environment. This presents a theoretically promising avenue for future research to explore the nuanced interactions between the person and the environment in fit experiences.

Third, despite our findings on social cognition, research on fit in this area remains highly limited and fragmented. Some studies show that the social environment can significantly influence the experience of fit. For example, Cooper-Thomas and Wright's (2013) qualitative investigation highlighted that social factors such as culture, social opportunities, and cliques are defining features of misfit. Likewise, Billsberry et al. (2023) demonstrated that social misfit can arise from either a single episode or repeated encounters, involving acts of omission (e.g., ostracism) or commission (e.g., bullying). Other studies have explored the interplay between individuals and their environment in shaping fit or misfit. For instance, Chuang et al. (2015) outlined how PE fit in a Chinese context involves interactions with coworkers, supervisors, and family members, revealing processes such as reciprocity, affective connection, and negotiation to achieve harmonious work and life balance. Additionally, D. J. Follmer et al. (2017) found that social factors like changes in the work environment, discrepancies between stated and practiced organizational values, and social signals could contribute to misfit experiences. Interestingly, these studies predominantly focus on the context of misfit and are largely based on qualitative investigations. Therefore, a novel and intriguing research direction is to systematically examine the nomological network of social cognitive processing in fit experiences. Future research could explore questions such as: What is the conceptualization and dimensionality of social cognition in relation to fit? How do the two parties interpret their interactions? How does one form the experience of fit based on different types of social cognition? How does social cognition vary under different conditions? What are the varying outcomes associated with different types of social cognition?

Provided the promising developments regarding the social aspect of fit, we believe it is time to integrate this dimension into the theoretical framework of PE fit. Such advancement could enrich PE fit theory, especially given the theoretical stagnation in fit research (Edwards, 2008).

Methodological Contribution

Our study not only introduces new ideas but also novel techniques (Lieberman, 2007) to the field of PE fit: we employed a task-based assessment technique from organizational neuroscience. This technique captures individuals' brain activities while they perform tasks, as opposed to static techniques that measure brain activity during rest. Future research may further explore the use of other neuroimaging technologies with a better temporal resolution, such as the electroencephalography or magnetoencephalography, to capture brain activity during interactions between individuals while they engage in tasks designed to induce fit perceptions. This investigation will be especially meaningful given that our research shows that social cognitive process is likely to be an important future theme for study. A potential direction is to design neural research to study which type of interaction better characterizes the experience of fit.

Practical Implications

An implication for organizations is that managers can be trained to recognize that employees' perceptions of fit arise from various sources (i.e., cognition, emotion, and social). This awareness is crucial, because when employees express their sense of compatibility, managers can identify the underlying causes and provide tailored support. For example, in understanding employees' PO fit, managers can listen to employees' social interpretations to understand whether perceived value fit originates from the organization or other sources (e.g., a leader). This insight can help the organization better assess whether its values are effectively communicated. If employees align more with others' values than the organization's, organizations can implement practices to better align employees with their core values and goals.

Another practical implication is that if management aims to foster a positive team atmosphere, it may be more effective to assemble teams based on fit types more closely linked to affective processing (i.e., relational fit). For example, if an organization prioritizes harmonious connections among team members, this research suggests selecting employees who will align well with their group or supervisor. Thus, when managed effectively, this arrangement can foster a more cohesive and cooperative team dynamic. While an employee's fit with job characteristics or organizational values is equally important, relational fit is more directly tied to emotions, understanding, and interpersonal relationships within a team. Therefore, our findings contribute to understanding how organizations can prioritize different types of fit based on specific staffing needs.

Limitation and Future Research

The results of this study should be interpreted in light of several limitations. First, our focus on the neural aspects of relational and rational fit, as well as fit and misfit, was driven by our theoretical research questions, which aimed to address the cognitive and affective aspects of PE fit. However, it is understandable that one might desire more specific results pertaining to individual dimensions of fit, such as PJ fit, PO fit, PG fit, and PS fit. Unfortunately, we were unable to analyze our data at this level due to the need for a large number of stories per fit type per participant to achieve satisfactory statistical power. In Study 1, we decided early in the design process to incorporate sufficient theoretical dimensions into each fit type, as recommended by the fit literature (e.g., Chuang et al., 2016), to ensure content validity. This resulted in longer stories. In Study 2, the inclusion of job satisfaction scripts further limited our ability to increase the number of stories. Despite this limitation, it is important to highlight that our study marks a preliminary effort to integrate PE fit research with organizational neuroscience. Future research can employ alternative methods that strike a balance between validity and statistical power.

A second limitation of our study is that it is exploratory in nature and only captures fit perceptions in a static form. Future research may employ designs that track within-person brain activities related to fit perceptions over time. Investigating changes in fit over time is theoretically significant (Englert et al., 2023; Jansen & Shipp, 2019; A. Kristof-Brown et al., 2023), as the temporal aspect of fit underlies many classic fit theories, such as the theory of work adjustment (Dawis & Lofquist, 1976) and the attraction, selection, transformation, manipulation, and attrition model (Roberts, 2006). The notion of fit change is further emphasized by the fact that workplace events and experiences can lead to increases or decreases in perceptions of fit (P. Bayl-Smith & Griffin, 2017). Thus, a neuroscientific investigation into fit change has the potential to clarify how personal changes (e.g., due to life events) and/or environmental changes (e.g., due to jobs or supervisors) influence changes in intrinsic (trait-like) brain patterns. It can also capture within-person reflexive (state-like) brain patterns that occur while participants interact with each other or experience an event, possibly using the electroencephalography mentioned above. This type of study design would also enable scholars to examine the types of events that give rise to fit perceptions at a temporal level (Vleugels et al., 2023).

Conclusion

This research clarifies the nature of perceived PE fit by identifying cognitive, affective, and social cognitive processing components and distinguishing perceived fit from job satisfaction using neuroscientific and psychological approaches. The findings suggest a potential interplay among these three components of experienced fit and indicate that perceived fit relates more closely to social cognitive processing, which is other-oriented, whereas job satisfaction is more strongly linked to goal attainment, which is self-oriented. Collectively, these insights open new avenues for future theoretical exploration and managerial interventions in areas such as temporal fit, dynamic person–environment interactions, and talent management.

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(*Appendix follows*)

Appendix

Sample Stimulus Scripts Used for Person–Environment Fit and Filler

PG fit	PG misfit
I work in the human resources department in a financial services company. I love outdoor activities and my coworkers in my department enjoy the outdoors as well. We are all willing to help others, are friendly, and value honesty. We have a common work style: always finishing tasks that take a long time to complete. My coworkers in my department will publicly acknowledge me, which is one of my preferred ways of receiving a reward.	I work in the human resources department in a financial services company. I value fairness and achievement, but my coworkers in my department are selfish and fool around. I work hard and put a lot of energy into my work, but it is still not up to the standards set by my department. My coworkers in my department do not work hard, which further drags me down. I am a heavy Internet user, but my coworkers do not use the Internet as much.
PS fit	**PS misfit**
I work in a financial services company and am overseen by a supervisor. We often come up with good ideas, and we take action quickly. I hope my supervisor can set clear goals and expectations for me, and reward me as soon as I achieve them. Indeed, this is what my supervisor does for me. We possess the same work style: We put a steady level of effort into tasks over time. We also highly regard fairness.	I work in a financial services company and am overseen by a supervisor. My emotions fluctuate easily, but my supervisor is calm. I rely on the Internet heavily, but my supervisor does not. I put a lot of effort into my work and I pursue success; however, my supervisor slacks off at work often. I hope my supervisor can inspire me to achieve personal fulfillment, but my supervisor often prevents me from succeeding.
PJ fit	**PJ misfit**
I am a human resources associate who works in a financial services company. My job requires the abilities of analysis, reasoning, and investigation, and it enables me to take responsibility for a complete and nonfragmented task. It is the job I want. I am not always emotionally stable, but it does not hinder my work. I am familiar with domestic and foreign labor laws, and this familiarity enables me to do my job well.	I am a human resources associate who works in a financial services company. I am brimming with ideas, and I desire a job that allows me to convey aesthetics and to improve others' lives. However, my job does not encourage me to express ideas and convey aesthetics, and it does not have an influence on others. I have project management abilities, but I am unable to exercise them, as I am often occupied with miscellaneous tasks.
PO fit	**PO misfit**
I work for a financial services company in the financial industry. I value honesty and my company also has high expectations for employees in terms of honesty. I attach great importance to achievements, and similarly my company is committed to the pursuit of breakthroughs. I work very hard to fulfill my company's expectations about the effort exerted by employees. The performance-based bonus provided by my company is the reward type I desire.	I work for a financial services company in the financial industry. I believe that being successful is the most important thing, so I do my very best for my company. However, my effort is not appreciated by the company. I value fairness, but my company engages in differential treatment of employees from time to time. The competition between my company and other companies is very fierce and is, in my opinion, excessive.
Filler	**Filler**
In the employment selection process used by the company for which I work, candidates have to fill out an application and a survey regarding their job interests; the candidates also have to sit for a job knowledge test and other tests. The human resources department is responsible for proctoring and scoring the tests. The interviews with the candidates are carried out by the head of the hiring unit. The human resources department will notify the candidates of the selection decision.	The company I work for often responds to government tenders for bids, but we face the problem of a shortage of labor from time to time. To solve this type of problem, my company recruits short-term employees and enters into temporary, seasonal, or customized employment contracts with these employees, always in compliance with stipulations in labor laws. My company has long been using this strategy to balance its demand for labor with deficits in the supply of labor.

Note. PG = person–group; PS = person–supervisor; PJ = person–job; PO = person–organization.

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