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From Other and From World: Expanding the Current Model of Existential Isolation

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by

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Abstract

Extant research investigating the nature of existential isolation (EI) has focused primarily on the experience of the gap between one's mind and the minds of others (self-other EI). The general purpose of the current research was to begin exploring the experience of the gap between one's mind and the world (self-world EI). This purpose was carried out across three studies. A pilot study confirms that self-world EI is a relatively common experience that usually involves meaning violation or dissociation, and results in psychological discomfort and self-doubt. Study 1 found that self-world existential isolation produces more "EI affect" (e.g., afraid, isolated, lonely, detached) than dental pain and daily routine experiences. Study 1 also tested the prediction that self-world EI should threaten self-determination needs (e.g., competence, relatedness) but support was not found for this prediction. However, a pair of exploratory mediation models found that self-world EI negatively threatened competence and relatedness needs indirectly through EI affect. Study 2 tested whether experiences of I-sharing (which attenuate self-other EI) and meaning-making (which attenuate self-world EI) fluidly compensate for threats to self-world and self-other EI, respectively. Results of Study 2 found that I-sharing and meaning-making did not attenuate feelings of EI more effectively than a distractor task. Taken together, the results of these studies suggest that self-other and self-world EI experiences produce a similar profile of negative affect that may have downstream consequences on self-need satisfaction. I discuss theoretical and clinical implications for these findings.

Introduction

Existential isolation (EI) broadly refers to the ontological gap between conscious experience and objective reality (Yalom, 1980). This includes at least two broad categories of gaps: those between individuals' minds and the objective, physical properties of the external world (self-world EI), and those between individuals' minds and the minds of other people (self-other EI). Recent theoretical construals and extant empirical investigations of EI have focused exclusively on experiences of self-other EI (Pinel et al., 2004). Here, I aim to expand on extant research by proposing a psychological model grounded in philosophy of mind that captures more holistically the phenomenological dimension of this construct and ties it to individuals' experiences of fundamental self-needs. Specifically, the current research tested the hypotheses that self-world EI and self-other EI experiences (i) are distinct from each other, (ii) have unique effects on needs for relatedness and competence (Ryan & Deci, 2017), and (iii) are fluidly compensatory. The proposed research integrates previously unintegrated psychological concepts (e.g., existential isolation, meaning-maintenance, dissociation, self-determination) and offers novel and potentially useful insight into various clinical conditions, particularly those characterized by dissociative symptoms such as generalized anxiety and depression (Azoulay et al., 2020), schizophrenia (Ross & Keyes, 2004), and post-traumatic stress disorder (Schauer & Elbert, 2015).

Though the term was only recently coined (Yalom, 1980), philosophers have discussed the nature of existential isolation (EI) since it was introduced in Descartes' Meditations (Descartes & Moriarty, 2008). In this seminal work, Descartes lays out a simple and profound deduction. In failing to refute the possibility that his conscious experience could be illusory, as in a dream or hallucination, he concludes that only consciousness itself is truly knowable. Descartes' position, sometimes referred to as 'solipsism,' demonstrates the mind's irreparable isolation from objective reality. Given that we perceive

the world through our senses, we merely experience mental representations of the objects and events we encounter, rather than the objects and events themselves. Nietzsche characterized this inherent limitation of our experience as "a groping game at the backs of things," insofar as the mind is metaphysically isolated from directly experiencing the true nature of external objects and events (Nietzsche & Adjaye, 1992, p. 60). Thus, according to philosophical perspectives, EI is the distinction between the representation of the external world and the world itself. It is the ultimately "unbridgeable gap" between the mind and the outside world (Yalom, 1980, p. 9).

Existential Isolation is thus an ontological problem, more often described by philosophers as "the mind-body problem," or "the hard problem of consciousness." The current research aimed to study the psychological implications of experiences in which the ontological problem of EI is salient. I propose there are at least two implications of the ontological problem of EI that drive such experiences. First, EI implies that every consciousness must remain a discreet entity unto itself, inaccessible to other consciousnesses, which may frustrate uniquely intersubjective, interpersonal needs such as belonging (Baumeister et al., 2017; Pinel et al., 2021) and relation (Ryan & Deci, 2017). Throughout this discussion, I refer to this first implication as 'intersubjective opacity,' and argue that its psychological salience constitutes the experience of self-other EI. Second, EI implicitly threatens one's sense of objectivity, undermining the belief that one's perceptions accurately correspond to an objective reality, which may similarly thwart the epistemic need to know, as well as needs for structure (Neuberg & Newsom, 1993; Proulx et al., 2010), "footing" (Park et al., 2016), meaning and purpose in life (Martela & Steger, 2016), and self-competence (Ryan & Deci, 2017). Throughout this discussion, I refer to this second implication as 'extrasubjective opacity,' and argue that its psychological salience constitutes the experience of self-world EI. It is important to note, here, that the denotations 'self-other' and 'self-world' EI are not used in extant literature. I will use this nomenclature throughout the current discussion as a way to

differentiate experiences of EI deriving from intersubjective opacity and extrasubjective opacity, respectively.

While researchers have begun to outline the nature of self-other EI and its links to daily experiences (Helm et al., 2019; Pinel et al., 2004; Pinel et al., 2021), they have hitherto overlooked the possibility of self-world EI. This is problematic because there may be important antecedents and outcomes uniquely associated with self-world EI that elude current methods of operationalizing and measuring EI. The primary objective of the proposed research is to test the thesis that self-other and self-world EI are likely made salient by unique sets of circumstances, and, when salient, result in at least some unique (and perhaps some overlapping) psychological outcomes. Specifically, Study 1 aimed to demonstrate that self-world and self-other EI experiences have unique effects on various self-needs despite producing similar affective outcomes. Study 2 builds on Study 1 by (i) replicating the effects of self-other and self-world EI on various self-needs and (ii) testing whether methods of ameliorating the affective outcomes of self-world and self-other EI experiences are interchangeable in their efficacy. Showing fluid compensation of amelioration between EI experiences will provide evidence that such experiences are underwritten by a common existential concern (e.g., Proulx et al., 2012). Likewise, demonstrating novel outcomes associated with self-world EI will highlight the importance of investigating this previously unexplored dimension of EI experiences.

Intersubjective Opacity and Self-Other Existential Isolation

Thomas Nagel (1974) famously illustrated the implication of intersubjective opacity by addressing the question of whether we could ever know "what it's like" to be a bat. Nagel argues that even if we were to spend our lives studying every detail of the experiences of bats, we would still not understand *what it's like* to be a bat. This is because, Nagel argues, conscious experiences are comprised of "emergent" (i.e., "what it is like") qualities that are irreducible in physical terms. Acting

like a bat or somehow successfully supplanting a human consciousness into the body of a bat cannot help anyone learn *what it is like* to be a bat insofar as both strategies involve a human consciousness perceiving physical batness, which is qualitatively distinct from the native experience of being a bat. Nagel's illustration convincingly demonstrates the intersubjective opacity of conscious experience: not only is each conscious experience a world in and of itself, but each of these worlds must be inhabited by a lone entity.

Intersubjective opacity is thus an inherent limitation of the human condition, and as such imposes pervasive psychological implications when salient in the minds of individuals. Situations in which intersubjective opacity is most likely to become salient are those in which one perceives a difference between one's own subjective experience and one's presumptions about the subjective experiences of others. For example, suppose Gloria and her friends are at the beach when she spots a cloud in the sky that bears a striking resemblance to an armadillo. She turns to show the armadillo cloud to her friends, but they don't agree about its appearance. One friend determines the cloud looks more like a dolphin. The other is unable to make out the armadillo, the dolphin, or anything at all. In this situation, Gloria and her friends bump into the outer and opaque walls of their conscious experiences, unable to see the world from one another's perspectives. Their misaligned experiences provoke an uncomfortable feeling that researchers hitherto have called, "EI," but what I will refer to for the duration of the current discussion as uniquely "*self-other* EI." In sum, the meaning of self-other EI is the feeling of being alone in one's consciousness; the sense that others do not understand or could not possibly come to know one's own subjective experiences (Pinel et al., 2017).

Note that self-other EI is distinct from related forms of isolation such as loneliness and intrapersonal isolation. Loneliness refers to the feeling associated with the perception of having fewer or poorer-quality relationships than what is desired (Pinel et al., 2017 Russel, 1996). Intrapersonal isolation refers to the feeling associated with discrepancies within one's sense of self (Yalom, 1980). In

contrast, the meaning of self-other EI does not involve the quantity and quality of one's relationships nor the coherence and consistency of one's sense of self. Rather, it is feasible for people who are satisfied in their relationships and intrapersonally intact to feel existentially isolated from others around them. For example, when measured using the Existential Isolation Scale (EIS), self-other EI is only moderately correlated with loneliness in several studies (Helm et al., 2020; Park & Pinel, 2019; Pinel et al., 2017). Similarly, American men report stronger feelings of self-other EI than American women, despite reporting lower levels of loneliness (Helm et al., 2018). Taken together, these findings suggest that self-other EI is a unique construct, at least apart from the closely related construct of loneliness (Pinel, 2021).

Empirical research has begun to shed light on the antecedents and outcomes associated with self-other EI experiences. In early, qualitative studies, palliative care patients who felt overlooked, objectified, or dehumanized by their caregivers reported feelings that align with Yalom's definition of self-other EI, and were less satisfied with their overall treatment, more anxious, and felt less in control than patients who felt acknowledged by their caregivers (Strang et al., 2001). People who are introverted and avoidant (Helm et al., 2020), and score lower in conscientiousness, agreeableness, and extroversion (Pinel et al., 2017) are more likely to report feelings of self-other EI. The extent to which people's self construals include close others and social group affiliations (i.e., interdependent self-construal) is also negatively associated with self-other EI, which could at least in part explain why American men are higher in self-other EI than American women (Helm et al., 2018), as well as why Americans experience more self-other EI than South Koreans regardless of gender (Park & Pinel, 2020). Self-other EI is also positively associated with anxiety, depression, and suicidal ideation (Constantino et al., 2019; Helm et al., 2020). Outcomes such as self-liking and emotional stability are negatively associated with self-other EI (Pinel et al., 2017). Findings such as these, though correlational, suggest that experiences of self-other EI are pervasive and distressing. Experimental investigations similarly

point to concerning outcomes associated with EI. For example, when researchers primed self-other EI by asking participants to recall a situation from their own lives in which they felt "alone in a crowd," participants showed significantly more death thought accessibility relative to a control group (Helm et al., 2019). The summary of these findings suggests that certain personality traits and self-construals may generate feelings of self-other EI, obstructing interpersonal connection at even the most fundamental levels.

Extrasubjective opacity and Self-World Existential Isolation

Another troubling implication of the ontological problem of existential isolation is that of extrasubjective opacity. Each of us lives alone in a world of conscious experience, engulfed in *qualia*, unable to verify whether our perceptions correspond to an objective reality. The nature of this problem is commonly illustrated by the *brain-in-a-vat hypothesis*, which states that, given the purely subjective quality of conscious experience, we are unable to reject the proposition that we are brains in vats, submerged in nutrient-rich fluid, connected to a complicated array of electrical wires that stimulate our neural tissues to produce a simulated versions of reality (Sherman & Harman, 2011). This thought experiment illustrates our inability to objectively determine the sources of perceptions. If we cannot reject the claim that our conscious experience is simulated, then we cannot be certain that our conscious experiences correspond to an objective reality. Likewise, we cannot be certain our memories are true. For we are not only trapped within the confines of consciousness, we are also trapped within the *present moment* of consciousness (Kotzen, 2020).

Extrasubjective opacity is thus an inherent limitation of the human condition. However, its psychological implications remain unknown. The current research draws from meaning-making model research to identify moments in which extrasubjective opacity is likely to become salient. I propose that experiences involving interrupted relations between mental states and world states highlight the

gap between the world and the mind, and thus drive salience of extrasubjective opacity. There are at least two broad categories of psychological events in which the relation between mental states and world states is interrupted: meaning violations and dissociative experiences. Meaning violations refer to conscious events in which one's expectations of the world are violated, imposing an inexplicable "mismatch" between one's internal expectations and one's perceived status of the outside the world (Proulx & Inzlicht, 2012_a). For example, the experience of seeing an object in one location and then inexplicably discovering the same object in another location a moment later constitutes a meaning violation. Dissociative experiences involve "disruptions in the usually integrated functions of consciousness, memory, identity, or perception" (Seedat et al., 2003, p. 115). For example, the experience of having worked for many hours without being able to recall what one accomplished constitutes a dissociative experience. When mental processes are disintegrated, one's sense of reality becomes warped, which demonstrates the unsettling fact that the version of reality to which one has access is purely representational. When the world inexplicably fails to validate our expectations, or when reality itself is perceived to be a mental construct, extrasubjective opacity is salient. I propose any phenomenon in which extrasubjective opacity is salient is an experience of self-world EI. In the following sections, I will give more detailed summaries of meaning violations and dissociative experiences and lay out arguments for why such events should cause the experience of self-world EI.

Meaning Violations

The meaning-maintenance-model defines meaning as "expected relation" (Heine & Proulx, 2006). This definition neatly follows in the tradition of Western existentialists, many of whom conceived of the self as a purely relational being (Kierkegaard & Lowrie, 1946) and of ontology as a phenomenology of relation (Sass & Claramonte, 2020). Given this definition, meanings are always secondary attributes, contingent upon external factors such as time, location, circumstances, and the notions of those by whom they are derived. The meanings of any *thing*, then, are that thing's perceived

relations to all other things. A meaning of a raindrop, for example, is that it falls from a raincloud. The raindrop's meaning as "an object that falls" is contingent upon its relation to that from which it falls. For anyone who has experienced rain, this meaning exists in their mind as an expectation. When raincloud are present, the mind *expects* raindrops to fall.

Meaning violations occur when expected relations are violated by anomalous events. Suppose for example, Troy is walking through an empty parking lot on a bright and sunny day when a drop of rain suddenly falls on the tip of his nose. As he wipes it away, he scans the sky above him and confirms there is not a cloud in sight. Likewise, there are no puddles on the ground, nor any other indication of recent precipitation. Troy experiences a meaning violation insofar as the rogue raindrop subverts his expectations about raindrops and their relation to clouds. We have learned from past research what Troy is likely to *do* in this situation. Meaning violations threaten one's need for meaning, even when the violation is small and seemingly insignificant (e.g., Bruner & Postman, 1959), and consequently motivate compensatory "meaning making" activities (Heine & Proulx, 2006). People make meaning by considering plausible explanations for the anomaly (e.g., did the raindrop fall from a nearby tree?) or — especially when such explanations are unavailable — they avert their attention to alternative, more secure paradigms of meaning.

We know what Troy is likely to do in response to a meaning violation, but how is Troy likely to *feel* in this situation? How does it *feel* to experience a meaning violation? The answer to this question partially depends on the nature and severity of the event. Some violations will seem inconsequential enough to ignore, whereas other violations will be sufficiently significant to force one into reconfiguring entire paradigms of belief. "Global" meaning violations of paradigmatic-shifting severity can be traumatic in nature and their effects, such as loss of motivation and sense of control, are pervasive and long-lasting (Park et al., 2016). Still, people feel distressed even when they encounter less significant violations of meaning. For example, in a classic study, Bruner and Postman (1949) secretly mixed "trick"

playing cards (e.g., a black four of hearts, a red two of spades) into sequences of normal cards and showed the cards one-by-one to participants for very short durations (10-1000ms). Participants attempted to identify each card. Sometimes participants failed to notice trick cards, suggesting a certain "threshold of incongruity" for the perception of meaning violations. However, in many cases, participants noticed the trick cards, but could not say what about them was different. The trick cards seemed to have disrupted participants' playing card paradigms (e.g., "I'm not even sure now what a spade looks like!"). Bruner and Postman recall that in such cases participants were visibly frustrated. A recent replication of this study measured the emotional reactions of participants more thoroughly than the original design and found that participants consistently showed verbal (e.g., "I feel like I'm taking crazy pills!" p. 180) and nonverbal (e.g., fidgeting, adjusting position, shaking head "no") signs of distress in response to disruptions to their preexisting playing card paradigms (Horner & Tung, 2011).

The aversive arousal that follows interruptions of expected relations is well documented across many subdisciplines in psychology. Whether it results from encountering an inexplicable drop of rain, subtly altered playing cards, artwork that juxtaposes familiar objects in unfamiliar ways (Proulx et al., 2010), or an incomprehensible summary of a complicated statistical analysis (McGregor et al., 2010), people consistently experience psychological discomfort when confronted with meaning violations. More specifically, it seems that the discomfort associated with meaning violations may be uniquely characterized by an apparent interruption between the mind and objective reality. For example, in a pilot study, we asked participants to describe how they would feel following a hypothetical meaning violation (e.g., a lost item suddenly reappears in a familiar location). Here are some of their responses:

"I'd feel like I was going insane for a bit."

"Confused, disconnected, insane"

"I would feel creeped out and get chills."

"I would feel as though my mind was playing games with me."

"I would feel confused, crazy, and doubtful."

The examples above are representative of a consistent theme that emerged from participants' responses. Participants consistently alluded to vague feelings of their minds' disconnection from objective reality. Philosophers and psychologists have referred to this experience in many ways, but none have sought to systematically describe and explain it from the perspective of existential isolation (Camus, 1942; Proulx & Inzlicht, 2012$_{a\text{-}b}$; Sartre, 1938).

Self-world existential isolation is the interruption of the relation between the mind and world (Yalom, 1980). This relation is fundamental insofar as it predicates all relations between objects and events external to the self. And yet, the mind's connection to objective reality is ultimately conveyed through the imperfect mediums of sense organs, processed in relation to preexisting beliefs, attitudes, and experiences and is thus ultimately "doxastic" in nature (Morrison, 2016). The illusion of the mind's relation to objective reality is adaptive, though. Indeed, interface theory of perception argues that conscious organisms have evolved to misperceive and reconstruct reality adaptively in response to their respective evolutionary challenges (Hoffman et al., 2015). Likewise, "cognitive confidence" (i.e., trust in one's perceptions and memories) can be negatively associated with a variety of troubling mental health outcomes, such as eating disorders (Olstad et al., 2014), obsessive compulsive disorders (Hermans et al., 2008), depression, and anxiety (Saed et al., 2010). Healthy psychological functioning is thus contingent upon the persistence of an "illusion" that our conscious experiences correspond to an external world of physical objects and events. Meaning violations threaten this illusion. Consider that the consistency of expected relations in the outside world is one of the ways we differentiate waking experiences from dreams (Nagel, 1959). When that consistency is violated, the line between dream and reality dissolves, and the illusion breaks down. One is suddenly thrust into a state of being in which meanings are purely

subjective, recognizing, perhaps implicitly, that one's conscious experiences do not necessarily correspond to an objective world. As I have argued, the uncanny and isolating feeling associated with such experiences is *self-world EI*.

Dissociative Experiences

Dissociative experiences occur somewhat commonly in non-clinical populations (Goldberg, 2020; Ray, 1996; Seedat et al., 2003). Importantly, dissociative experiences are not the same as dissociative disorders. Dissociative disorders such as depersonalization and dissociative amnesia disorder are characterized by chronic and disabling patterns of dissociative experiences (Ross et al., 1989) and often emerge as compensatory responses to post-traumatic stressors (Armour et al., 2014; Gusic et al., 2018; Putnam, 1991). Whereas these disorders necessarily entail dissociative experiences, dissociative experiences themselves do not necessarily entail dissociative disorders.

There is no consensus about what constitutes a dissociative experience, and the types of experiences that are considered to involve dissociation vary widely. For example, consider the following items from the dissociative experiences scale (DES; Wright & Loftus, 1999):

> "I find that I sometimes I sit staring off into space, thinking of nothing, and am not aware of the passage of time."
>
> "I sometimes find that I am approached by people who I do not know who call me by another name or insist that I have met them before."

The first of these items describes a relatable and common experience, whereas the second item describes a more extreme event. Importantly, these items belong to different subscales of the DES. Still, they are both theorized to tap the same basic construct, and so there should be a common feature that ties them together. The DSM-V defines dissociative experiences as disruptions of usually integrated cognitive functions (American Psychiatric Association, 2013). However, this definition fails to capture

dissociative experiences such as mind-wandering (i.e., daydreaming) in which disruptions of usually integrated cognitive processes are not obviously present. After nearly fifty years, the conceptual debate surrounding the definition of dissociative experiences is apparently no closer to reaching a consensus (Černis et al., 2021). Thus, the meaning of dissociation remains "semantically open" (Giesbrecht et al., 2008), and while many researchers have rejected the possibility of a fundamental commonality among examples of dissociation (Hacking, 1995; Holmes et al., 2005; Jureidini, 2003, as cited in Giesbrecht et al., 2008), I propose that self-world EI may be a unifying feature of at least some subcategories of dissociative experiences.

Several studies have subjected responses to the DES to exploratory factor analyses (Ray, 1996; Ray & Faith, 1995, Soffer-Dudek et al., 2015). Results of these studies differ but taken together generally point to a three-factor structure including absorption, amnesia, and depersonalization. The *Absorption* factor typically includes items such as the feeling that fantasies and daydreams are real, a lack of awareness of the passage of time, and immersion in a TV show or movie. Absorption is a common dissociative experience (Goldberg, 2020; Selgiman & Kirmayer, 2008), and it occurs when attention is so deeply fixated toward a certain thought or stimulus that one fails to perceive or misperceives other stimuli. Such experiences may produce self-world EI insofar as the absorption implicitly juxtaposes subjective and objective realities, thereby making the gap between them salient. Next, the *amnesia* factor usually includes items such as failing to remember important events, forgetting the topic of conversation mid-sentence, and finding oneself in a location unable to recall how one got there. Amnesia can involve the "snapping out" of an absorption experience (i.e., *in situ* amnesia) or the inability to recall a past event (i.e., *segment* amnesia). Such experiences drive self-world EI insofar as they imply failure to perceive and encode past events from objective reality, illustrating an interruption between the mind and world, making the gap between them salient. Finally, *depersonalization* includes items such as not recognizing oneself in the mirror, feeling estranged from one's thoughts or emotions,

and feeling disconnected from one's body. Some experiences of depersonalization, such as feeling estranged from one's thoughts or emotions, do not obviously relate to experiences of self-world EI and are more closely related with what Yalom called "intrapersonal" isolation (Yalom, 1980, p. 354). On the other hand, depersonalization involving disembodiment (e.g., a concert goer having a drug-induced out-of-body experience) literally involve an apparent break between mental and physical realities and thus should drive feelings of self-world EI.

The majority of psychological events described as dissociative experiences are conceptually related to self-world EI insofar as they involve a perceived "uncoupling" of mental and physical realities (Meares, 1999). For example, when people describe experiences of dissociation, they often describe themselves as feeling "trapped in a glass bell jar" (Büetiger et al., 2020) or "in a bubble" (Černis et al., 2020). These descriptions seem to *explicitly* illustrate the ontological problem of existential isolation. The "uncoupling" aspect of dissociative experiences is typically accompanied by an inexplicable *strangeness*, as well. As in the "absurdity" attributed to meaning violations (Camus, 1942; Proulx & Inzlicht 2012_a), I propose the "strangeness" people attribute to dissociative experiences is the feeling of self-world EI. Indeed, a metanalysis aiming to identify a phenomenological prototype of dissociative experiences found that "a felt sense of anomaly" (i.e., "something is wrong, off, odd") united the diverse range of dissociative experiences observed throughout the 138 studies included in the analysis (Černis et al., 2021, p.4). Taken together, these findings suggest that dissociative experiences, especially those explicitly characterized by a perceived detachment from objective reality, constitute the hitherto inexplicable experience of self-world EI.

Existential Isolation and Self-Determination Theory

Existential isolation broadly refers to the sense of being alone in one's conscious experience. I have proposed that there are at least two ways in which people can come to experience EI. First, people

feel existentially isolated when intersubjective opacity is salient (i.e., self-other EI). Second, as the proposed research aims to show, people also feel existentially isolated when extrasubjective opacity is salient (i.e., self-world EI). Here, using self-determination theory as a theoretical framework, I propose that self-other and self-world EI each pose threats to important self-needs.

Self-determination theory argues that psychological well-being is contingent upon the fulfillment of three basic psychological needs: competence, relatedness, and autonomy (Ryan & Deci, 2017). Competence refers to the sense that one is broadly capable of carrying out actions to their intended outcomes. Relatedness refers to the sense that one's relationships are sufficient in number and quality. Autonomy refers to the sense that one's choices are unrestricted by undue external influences and parameters. Cross-culturally, psychological well-being is positively associated with the satisfaction of these needs (Church et al., 2013). To the contrary, people experience negative affect and anxiety (Reis et al., 2018), lower self-esteem (Owens et al., 1996) and diminished sense of meaning in life (Golant, 2011) when these basic needs go unfulfilled. The proposed theoretical model of EI suggests that EI experiences threaten people's feelings of competence, relatedness, and autonomy. More specifically, the proposed model suggests that the severity of the threat may depend on whether the EI experience occurred via intersubjective or extrasubjective opacity.

EI and Relatedness

Self-other EI derives from intersubjective opacity, involving the perception that one's subjective state is fundamentally cutoff from the subjective states of others. There are obvious reasons to presume such experiences may threaten one's need for relatedness. When people feel rejected, ignored, lonely, or otherwise interpersonally isolated, they are unlikely to feel related insofar as the construct of relatedness is defined by the absence of such feelings. Existential isolation is alleged to "cut beneath" (Yalom, 1980, p. 9) these more superficial forms of isolation, and as such may constitute a

particularly potent threat to relatedness. Whereas various forms of interpersonal isolation refer to the status of "being alone," self-other EI refers to the status of "being *alone in a crowd*" (Pinel et al., 2004). The need for relatedness may feel especially hopeless when -even in the presence of others- one is overwhelmed by feelings of alienation and detachment. Thus, satisfaction of relatedness needs is almost certainly contingent upon feelings of existential *connectedness*.

What does it mean to be existentially *connected*? To distinguish between the statuses of "alone" and "alone in a crowd" is to highlight the meaning of existential connection. According to Pinel et al. (2004), to feel alone in a crowd means to perceive that one's subjective experience is different from and opaque to those around them. To feel existentially connected, then, means to perceive that one's subjective experiences are aligned with and transparent to that of another person or group (Pinel et al., 2004). For example, Tammy and Wendy feel existentially connected when they notice one another simultaneously sighing from boredom during an after-school detention. Likewise, Raymond and Taylor feel existentially connected while they both panic after eating an unexpectedly spicy salsa. These examples exhibit existential connection insofar as the individuals involved momentarily perceive that they inhabit a shared conscious experience. This phenomenon, sometimes referred to as "I-sharing," may be an important factor contributing to people's feelings of relatedness. For example, despite the fact that objective similarity (i.e., similarity of traits, attitudes, demographic features) is among the strongest predictors of attraction (Buss, 1984; Rushton & Bons, 2005), people consistently prefer to pursue relationships with objectively dissimilar I-sharers relative to objectively similar non-I-sharers (Long et al., 2017; Pinel et al., 2004). Likewise, people are significantly more likely to express prosocial behaviors and attitudes toward objectively dissimilar I-sharers than objectively similar non-I-sharers (Huneke & Pinel, 2016). Indeed, relationship partners who I-share more frequently are significantly more satisfied in their relationships and have a stronger sense that their partners know their "true selves" (Rivera, 2018). When I-sharing becomes a consistent feature of a relationship, relationship

partners draw from their shared experiences to effectively co-construct shared versions of reality, resulting in stronger commitment, greater satisfaction, and increased perceptions of mutual self-expansion (Rossignac-Milon et al., 2020). At the time of this writing, no research has explicitly measured the effects of I-sharing and shared reality on needs for relatedness. However, the findings discussed here suggest that meeting relatedness needs depends on one's sense of existential connection to others. Thus, self-other EI, which is by definition a threat to existential connectedness, should threaten relatedness needs.

Do self-world EI experiences also threaten relatedness needs? It is difficult to imagine that one should feel a strong sense of relatedness within the scope of such experiences. It could be that self-world EI obstructs social processes that facilitate the satisfaction of relatedness needs. For instance, frequency of dissociative experiences is positively associated with social withdrawal (Modestin et al., 2002). Another plausible explanation could be that self-world EI constitutes a meta-meaning violation, resulting in a subjective state akin to Frankl's "existential vacuum" (Frankl, 1972). As fundamental systems of meaning are undermined or set into flux, even if temporarily, the higher-order meanings ascribed to interpersonal relationships may be compromised. When uncertainty and apathy pervade the meanings of interpersonal relationships, one's sense of relatedness is likely to suffer. In any case, it is beyond the scope of the current research to elucidate the explanation for the relationship between self-world EI experiences and relatedness needs. The current research was equipped to test the hypothesis that self-world EI experiences should negatively affect feelings of relatedness to some extent, though to a lesser extent than self-other EI experiences. Although any EI experience is likely to threaten feelings of relatedness, self-other EI experiences should be significantly more impactful in this regard insofar as they are mechanized by an interruption of the relation between one's mind and the minds of others, which is a more explicit and salient threat to relatedness than the implicit one posed by self-world EI.

EI and Competence

Self-world EI derives from extrasubjective opacity, involving the perception that one's subjective state is fundamentally cutoff from the world of physical objects and events. The extrasubjective opacity from which experiences of self-world EI derive is an inherent and universal limitation of consciousness. Most of the time, we do not recognize this limitation explicitly. Instead, we operate on the presumption that our conscious experiences correspond to an objective reality. Self-world EI experiences invalidate this presumption, destabilizing our sense of footing in the world and disrupting our systems of meaning. For example, when Damian spends an unfortunate chunk of his afternoon searching for his car in a large and complicated parking garage, he becomes increasingly distressed as his perceptions and memories conflict with objective reality. Was he not on this floor a moment ago? Did he not check that corner already? When he traveled up that flight of stairs, why did the level number go down? Damian's unnerving parking garage experience highlights the subjectivity of the reality he inhabits, causing him to doubt his competence. He feels less capable of accurately predicting and effectively interacting with a world from which he feels uncannily detached.

There is some, limited scholarship suggesting that self-world EI experiences should threaten needs of competence. Park et al. (2012) theorize that violations of "global meanings" (i.e., foundational systems of belief) should diminish one's sense of competence. We rely on global meanings to help us navigate the world. When those meanings are disrupted, we feel uncertain about our perceptions and decisions. Empirical studies looking the effects of dissociative experiences on competence needs support this view. Kwapil et al. (2002) found that satisfaction of competence needs was negatively associated with all three subscales of the dissociative experiences scale (i.e., absorption, amnesia, and depersonalization). Some studies reveal negative associations between dissociative experiences and feelings of self-efficacy, a plausible proxy for competence (Cavanaugh & Kapij, 2020; Mahoney &

Benight, 2019; Černis et al., 2022). Though limited in quantity, the results of these studies support the hypothesis that self-world EI experiences should thwart competence needs.

In contrast, self-other EI experiences may not threaten competence needs as strongly or directly as self-world EI experiences do. Self-other EI occurs when intersubjective opacity is salient. Under certain conditions, intersubjective opacity may imply extrasubjective opacity. For example, social situations involving subjective disagreement may pressure one party or the other to acquiesce. Forfeiting one's own construal of the world in favor of the construals of others may increase salience of extrasubjective opacity, negatively affecting the extent to which one feels capable of accurately predicting and effectively interacting with the world. Thus, self-other EI may negatively affect feelings of competence, though perhaps this outcome occurs indirectly through experiences of self-world EI. Nascent empirical research corroborates this position. For instance, Pinel et al., (2017) found that participants' perceived levels of competence were negatively associated with chronic self-other EI, but not acute feelings of self-other EI. In another study, chronic feelings of self-other EI predicted less certainty in ambiguous situations (Pinel et al., 2021). These findings suggest that repeated encounters with people whose subjective experiences significantly differ from one's own may threaten one's sense of connection to the world, and thus, one's sense of competence. Again, it is beyond the scope of the proposed research to elucidate the explanation for the relationship between self-other EI experiences and competence needs. The proposed research is equipped to test the hypothesis that self-other EI experiences should thwart competence needs to some extent, though to a lesser extent than self-world EI experiences. Although any EI experience is likely to threaten competence needs, self-world EI experiences should be significantly more impactful in this regard insofar as they are mechanized by an interruption of the relation between one's mind and the world, which is a more explicit and salient threat to competence than the implicit one posed by self-other EI.

EI and Autonomy

The relationship between EI experiences and autonomy needs may be less straightforward than the relationships between EI experiences and other self needs. This is because there are likely to be myriad situational factors and individual differences that moderate the relationship between EI experiences and autonomy. For example, in the case of self-other EI experiences, feelings of autonomy may depend on the extent to which the EI experiencer desires to affiliate with the other person or group. Desire to affiliate and pressure to conform are positively associated (McGhee & Teevan, 1967). Thus, self-other EI experiences that occur between an individual and an affiliation target may pressure the individual to conform, diminishing the individual's sense of autonomy. To the contrary, self-other EI experiences that occur between an individual and an unattractive target may enhance the individual's sense of autonomy insofar as the individual asserts their subjective independence without considerable consequence.

The relationship between self-world EI experiences and autonomy may depend on people's construals of such experiences. For example, when people construe self-world EI experiences to mean there is something "wrong with" their minds (i.e., mental impairment), feelings of autonomy may suffer. The colloquial understanding of mental impairment involves a lack of control over one's actions (Bolton et al., 2012). Self-world EI experiences may threaten autonomy needs under the pretenses of such construals. On the other hand, self-world EI experiences may cause people to *explicitly* recognize the realities they inhabit are wholly subjective. When extrasubjective opacity is explicitly salient, people may feel a greater sense of autonomy insofar as they perceive greater control over their construals of the world (e.g., "*mind over matter*").

Note that the current research did not directly test these predictions about the relationship between EI experiences and autonomy needs. However, I planned to deploy several exploratory *post-hoc* analyses with these possibilities in mind.

Affective Reactions to Existential Isolation

In addition to testing the effects of self-other and self-world EI experiences on various self-needs, a primary purpose of the current research was to identify people's affective reactions to such experiences. Specifically, the current research aimed to i) test whether self-other and self-world EI experiences generate similar affective states, and ii) test whether methods of attenuating these affective states are interchangeable in their efficacy. This is important, because the theoretical model driving the current research uses the terms 'self-other' and 'self-world' to distinguish between separate *paths* (i.e., categories of causal antecedents) that lead to EI. The path for self-other EI is salience of intersubjective opacity, whereas the path for self-world EI is salience of extrasubjective opacity. Each path may be associated with unique self-needs (e.g., relatedness versus competence). However, if self-world and self-other EI experiences derive from a common existential concern, then they should ultimately result in similar affective states.

There is a substantial body of theoretical scholarship distinguishing "existential feelings" from common affect (see Ratcliffe, 2008 for a review). Existential feelings are similar to affective states insofar as they are both self-relevant aspects of phenomenal existence. What differentiates existential feelings is --unlike affect-- they lack intentionality (Stephan, 2012). Whereas affect always corresponds to a particular entity or event, existential feelings do not; they instead refer to how one "finds oneself in the world" (Ratcliffe, 2018, p. 3). For example, people suffering from depressive disorders often report significant experiential changes following the onset of depressive episodes, as if they inhabit colder and less interesting worlds than the worlds they inhabited before their episodes began (Fernandez, 2014).

There may be specific events in the daily lives of depressed people (e.g., a social rejection) that elicit certain affective states (e.g., resentment) that contribute to their overall experiences of depression. However, the underlying existential feelings associated with the depressive episode do not correspond to specific circumstances. Rather, such feelings specifically reference how one feels within or in relation to the world (e.g., *the world is a cold place*). One's existential feelings, that is, the ways in which one "finds oneself in the world," are thought to influence the array of affective states one experiences in daily life (Ratcliffe, 2018).

Though self-other and self-world EI experiences may often derive from qualitatively distinct sets of environmental conditions, they should provoke the same existential feeling of being utterly alone in one's subjective experience (EI). Therefore, following Ratcliffe's (2018) logic, self-other and self-world EI experiences should overlap in their affective outcomes. A primary purpose of the proposed research is to test this prediction. A pilot study revealed an internally consistent composite of affective states associated with self-world EI experiences (afraid, isolated, lonely, detached, disconnected). In Study 1, I will test whether self-other EI experiences produce the same set of feelings.

Interestingly, the logic predicting that self-other and self-world EI experiences should result in similar affective states implies that attenuating the existential feeling underlying these affective states should effectively mitigate them (Proulx et al., 2012). This logic is similar to that offered in influential models of self-consistency, such as self-affirmation theory (Steele, 1988) or the self-zoo model (Tesser, 2001). Specifically, these models propose that the unpleasant arousal arising from threats to one type of self-need can be mitigated by experiences that bolster a distinct self-need. For instance, in a seminal study, participants who had performed poorly on an academic test were more likely to wear their schools' colors following a sports team victory than participants who had performed well (Cialdini et al., 1976). This finding suggests that students attempted to relieve the negative arousal associated with one

set of circumstances by refixing their attention to and participation in a seemingly unrelated, but more self-affirming set of circumstances.

How, then, does one mitigate the existential feeling of EI? Considering the existential feeling of EI is provoked via salience of intersubjective and extrasubjective opacity, perhaps perceptions of intersubjective and extrasubjective *transparency* will mitigate EI. When people I-share, they experience an illusion of transparency between their own consciousness and the consciousness of another person or group (Pinel et al., 2004). Likewise, when people "make meaning," they invent ways of integrating anomalous events into pre-existing paradigms of belief (Heine et al., 2006). While I-sharing promotes the perception that one's conscious experience is shared by others, meaning-making promotes the perception that one's mind coheres with reality. In the case of existential isolation, I-sharing and meaning making follow disparate but parallel compensatory paths that ultimately re-establish a sense of connection between one's mind and *some external entity*. If such is the case, then I-sharing and meaning-making should fluidly compensate for the existential feeling of EI and the affective states it produces. In Study 2, I will test whether I-sharing and meaning-making can attenuate the affective states associated with EI regardless of whether the EI occurred via the self-other or self-world pathway. See Figure 1 for a visualization of these predictions.

Overview and Hypotheses

In the following sections, I will lay out the methods and results for a pilot study and a pair of experiments. The primary purposes of the pilot study were to (i) determine whether self-world EI is a relatable experience, (ii) identify themes within participants' self-generated self-world EI experiences, and (iii) capture participants' affective responses to such experiences. Overall, I found that most people are able to produce experiences of self-world EI, especially when they are provided examples. Likewise, many of the experiences participants described involved meaning violations and/or dissociative

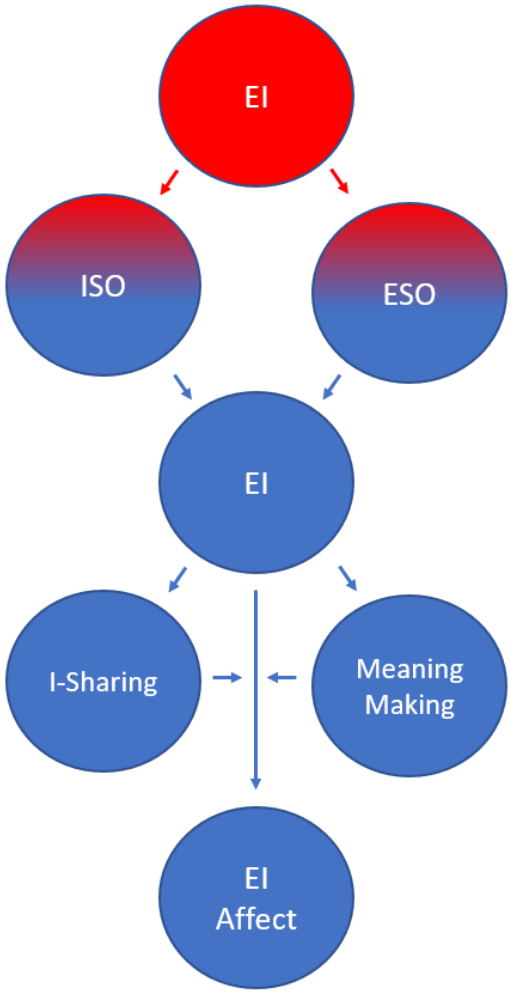


Figure 1: *Theoretical Model*

Note: The ontological problem of EI (red) makes implications of intersubjective opacity (ISO) and extrasubjective opacity (ESO), leading to the experience of EI (blue) and its psychological implications.

experiences. Affective responses to the experiences participants described (and similar experiences they were asked to imagine) produced stronger aversive feelings than a control experience.

Studies 1 and 2 build on the findings from the pilot. In Study 1, I aimed to test whether self-other and self-world EI experiences differ in their effects on various self-needs but converge in their affective outcomes. Specifically, I predicted that (i) participants in a self-world EI threat condition should report lower feelings of competence than participants in a self-other EI threat and control

conditions, (ii) participants in the self-other EI threat condition should report lower feelings of relatedness than participants in the self-other EI threat and control conditions, and (iii) participants in both EI threat conditions should report stronger "EI affect" than participants in the control condition. In Study 2, I aimed to replicate the effects of EI experiences on self needs from Study 1 and test whether methods of ameliorating feelings self-other and self-world EI are interchangeable in their efficacy. Specifically, I predicted i) a replication of the effects of recalled self-other and self-world EI experiences on feelings of relatedness (i_a) and competence (i_b) observed in Study 1, and that ii) participants in the control compensation condition should report significantly more EI affect than participants in the EI compensation conditions.

Chapter 1: Pilot Study

The general purpose of the pilot study was to explore the phenomenological dimension of self-world EI experiences by asking if meaning violations and dissociative experiences generate experiences of EI, and if these are common enough experiences that participants can easily and readily recognize them in their daily lives and recall past examples of them.

Participants

I recruited 124 undergraduates (82 women, 39 men, 3 non-binary/third gender) from a college in the Southeastern United States to participate in this study for course credit. The mean age for this sample was 21.77 years. The racial composition was roughly representational of the regional population. One participant identified as Native Hawaiian or Pacific Islander (.8%), two participants identified as Native American/Alaska Native (1.6%), 14 identified as Black or African American (11.3%), 15 identified as Asian (12.1%), 85 identified as white (68.5%), 10 identified as other (8.1%), and three participants preferred not to report their racial identities (2.4%). All participants included in the analysis responded to all survey questions and responded correctly to at least one of two attention check items.

Procedure and Materials

Participants completed a two-part experiment with a 4-cell, within-participants design, hosted via Qualtrics. The study is split into two main sections: a self-generated EI section and an imagined EI section. Qualtrics randomized the order in which each participant encountered each section. In the self-generated EI portion of the study, participants watched an illustrated video that described "mind-world gap experiences" (i.e., self-world EI experiences) as moments in which "the gap between the mind and the world becomes apparent." The video then listed several specific examples of these sorts of

experiences to ensure participants understood the construct (e.g., "seeing something out of the corner of your eye, but when you turn to look, nothing is there"). Following the video, participants reported whether they believed they had ever had such experiences. Participants who responded affirmatively wrote about their experiences and the way they made them feel before responding to several follow up items that asked more about their reactions to the experiences they described; those who responded negatively moved on to the next section of the Qualtrics survey.

In the imagined EI section of the study, participants watched a series of three 2-minute video vignettes: one illustrating a meaning violation (e.g., you find a lost item in a place you recently searched without success), one illustrating a dissociative experience (e.g., you have a vivid dream that feels like everyday life), and one illustrating a neutral (control) experience (e.g., you are watching TV and folding laundry). For purposes of generalizability, I developed two meaning violation video vignettes and two dissociative experience video vignettes and randomly assigned each participant to view only one from each set; no findings related to variables of interest differed across the two sets (*p*s > .05), so I collapsed across them for the analyses reported below. Following each video, participants responded to the same set of questions they answered (or would eventually answer) following the recalled self-world EI experiences they wrote about in the self-generated EI section of the study. Thus, the four within-participants conditions were: self-generated self-world EI, meaning violation video vignette, dissociative experience video vignette, and control video vignette.

Self-World EI Experience Reflection Questionnaire.

Following participants' self-generated self-world EI experiences and each video vignette, participants responded to a single qualitative question that asked, "how did (would) this experience make you feel?" before responding to a series of Likert-type items, including an adapted mind-world IOS

measure and several questions asking about the meanings and attributions participants made in reference to the experiences they described. See Appendix A for a full list of items.

Mind-world IOS. The inclusion-of-other-in-self scale (IOS) asks participants to indicate the extents to which they include another person in their own self-construals by selecting between seven pairs of increasingly overlapping circles (Aron et al., 1992). More overlap between the circles indicates more inclusion-of-other. The original validation of this scale demonstrated strong test re-test reliability following a two-week interval (α=.83-.87; Aron et al., 1992). It has been adapted for a variety of purposes, such as measuring one's sense of closeness to a community (Mashek et al., 2007) and one's sense of closeness to God (Hodges et al., 2013). Here, I adapt the IOS to measure the sense of connection (or disconnection) between one's "mind" and "the world."

*Impactfulness***.** Participants rated perceived impactfulness of the experiences they recalled (or watched in a video vignette) using a five-point Likert scale ranging from "not at all" to "very much" in response to the question, "how impactful was/[would] this experience [be]?"

Valence. Participants indicated the overall valence of the experiences they recalled (or watched in a video vignette) using a five-point Likert scale ranging from "very negative" to "very positive" in response to the question, "overall, was this/[would this be] a positive or negative experience?"

Attributions. I measured the extents to which participants felt that the experiences they recalled (or watched in the vignette videos) made them feel as though there was i) "something wrong with [their] minds," and ii) "something wrong with reality" by asking them to rate their level of agreement with each statement using a five-point Likert scale.

EI Affect

The Positive and Negative Affect Schedule (short-form; PANAS) is a widely used self-report scale that asks participants to use a five-point Likert scale to indicate the extents to which they experience twenty unique feelings and emotions. The scale has moderately good internal reliability (α= .86) and strong test-retest reliability (α= .47-.68 for positive affect subscale; α=.39-.71 for negative affect subscale; Watson et al., 1988). For the purposes of the current study, I adapted this scale by adding ten affective states and feelings, many of which derive from Ratcliffe's (2018) list of "existential feelings," and adjusted the instructions to better capture participant's in-the-moment feelings associated EI experiences (see Appendix B). Exploratory factor analysis of participants' within-conditions adapted PANAS scores revealed a factor of five items, which I call *EI affect*, including afraid, isolated, lonely, disconnected, and detached. Internal reliability for this scale of items was strong (α=.93).

Results

A majority of participants recalled having a self-world EI experience at least once in their lives (84%, n= 104). Participants' reported experiencing self-world EI more than once per month on a seven-point Likert scale (*M*= 3.28, *SD*= 1.42) ranging from "never/almost never" to "once every few days." This suggests that self-world EI experiences come to mind readily for most participants and are experienced frequently enough to constitute meaningful psychological experiences. Frequencies of such experiences did not differ between participants identifying as men (*M*= 3.14, *SD*= 1.15) and women (*M*= 3.33, *SD*= 1.53), $t(99) = .58$, $p = .56$. Likewise, frequencies of self-world EI experiences were unrelated to age ($p = .28$). The elapsed time between the events participants recalled and the time of their participation varied widely (1 day to 16 years; *M*= 19.97 months, *SD*= 33.22).

A primary purpose of the pilot study was to ask whether participants' accounts of personal self-world EI experiences fit into categories of meaning violations and dissociative experiences. Using an a

priori coding scheme, two raters, myself and a single research assistant naïve to the purpose of the current study, separately coded participants' self-generated self-world EI experiences to indicate the presence of a meaning violation, dissociative experience, both, or neither (see Appendix C for *a priori* coding scheme). Ninety-seven (93%) responses were coded as involving a meaning violation or dissociative experience by at least one rater. [2] Interrater reliability and percentage agreement were moderately good for meaning violations (k= .51; 78% agreement) and dissociative experiences (k=.55; 77% agreement).

Another purpose of the pilot study was to identify the feelings people experienced during self-world EI experiences. Notably, I took an exploratory approach to this objective, blending quantitative and qualitative methods, as well as statistical and theoretical decision-making. To begin, I submitted participants' affect scores to a series of exploratory factor analyses (EFAs), conducting one EFA for affect ratings associated with each of the four EI experiences participants wrote about. Each analysis used principal axis factoring extraction and oblique (Varimax) rotation. When taken together, the results of the EFAs were mostly uninterpretable. Within conditions, strong cross-loadings obscured the factor structures. Between conditions, items comprising patterns of extracted factors differed significantly from one another. The lone consistency among the EFA results was the emergence of general negative and positive affect factors as the initial factors across conditions (all results displayed in Appendix D).

The primary purpose of the factor analysis was to identify a profile of emotion uniquely related to self-world EI experiences. Although there is sound reason to think of meaning violations and dissociative experiences to cause or constitute self-world EI, participants in the self-world EI condition wrote explicitly about moments in which the gaps between their minds and the world were salient.

[2] Re-running the pilot (n = 131) without providing examples in the self-generated EI video resulted in two naïve raters coding 47.5% of participants' self-world EI experiences as meaning violations (k = .69) and/or dissociative experiences (k = .64).

Therefore, given the ambiguity and inconsistency of factor structures within and between conditions, the next portion of the analysis narrowed its focus to the self-generated EI condition, exclusively. Using the Kaiser criterion, the EFA in the self-generated EI condition extracted four factors. The first factor was a general negative affect factor, comprising all negatively valanced items. The second factor was a general positive affect factor comprising all positively valanced items. Since the purpose of the current analysis was to identify a *unique* profile of affect associated with self-world EI experiences, I ignored these general negative and positive affect factors. The third factor seemed to reflect a kind of angst (bored, irritable, frustrated). However, this profile of affect did not clearly reflect the feelings participants described in their qualitative descriptions of self-world EI experiences. Therefore, I moved on to the fourth factor. The fourth factor was a negatively valanced set of items that generally matched the feelings participants described while recalling self-world EI experiences (e.g., fear, isolation, and detachment; a sample of qualitative responses can be found in Appendix E).

Ultimately, I chose to extract the fourth factor as an "EI affect" measure. The factor showed a relatively low eigenvalue (1.17) and the items within the factor showed strong cross-loadings. However, given the negative valence of the factor, it seemed reasonable that the items comprising it should cross-load with the general negative affect factor. Therefore, I retained any item that did not cross-load greater than .20 with a factor *other than* the general negative affect factor. These items included afraid, disconnected, detached, isolated, and lonely. Hair et al. (1998) recommend using a factor loading of .50 as a cutoff for item retention in samples comprising 100-150 participants. Three of the five extracted items met this criterion. However, factor loadings of approximately .40 are generally agreed-upon as a cutoff for item retention, irrespective of sample size (Stevens, 1992). One item, 'afraid' (.38), narrowly missed this basic standard, but I still extracted it because it reflected trends in participants' qualitative responses. As a composite, the items were internally reliable across conditions ($\alpha = .87$).

A one-way within-subjects ANOVA revealed that EI affect differed significantly between conditions, $F(3, 309)= 47.78$, $p < .001$. Pairwise post-hoc comparisons of main effects with Bonferroni corrections revealed that EI affect was significantly stronger in the self-world EI conditions than in the control condition. Specifically, participants reported stronger EI affect following self-generated self-world EI experiences ($M= 2.35$, $SE= .11$), meaning violation video vignettes ($M= 2.66$, $SE= .11$), and dissociative experience video vignettes ($M= 1.99$, $SE= .11$) than they did following the control video vignette ($M= 1.36$, $SE= .06$), all p's $< .001$.

Table 1

Factor Analysis of Affect Items Within The Self-Generated EI Condition

	Factor 1	Factor 2	Factor 3	Factor 4 (EI Affect)
Item				
Interested	.00	**.74**	-.24	.09
Distressed	**.64**	-.20	**.43**	.23
Excited	-.02	**.86**	-.05	-.05
Upset	.35	-.25	**.59**	.05
Strong	.05	**.60**	.05	.03
Scared	**.85**	.01	.09	.19
Enthusiastic	.04	**.80**	-.01	-.06
Irritable	**.49**	-.13	**.63**	-.06
Alert	**.43**	.37	.09	.00
Inspired	-.02	**.89**	.02	-.06
Nervous	**.78**	.00	.19	.20
Afraid	**.74**	.07	.13	.38
Frustrated	.07	-.04	**.79**	.10
Confused	.28	-.02	.16	.21
Disconnected	.29	-.20	.15	**.75**
Detached	.17	.04	.04	**.69**
Nauseated	**.58**	-.04	**.41**	.08
"A chill"	.60	.37	.00	-.03
Isolated	**.64**	-.03	.14	**.63**
Lonely	**.70**	.02	.14	**.42**
Bored	.10	.13	**.51**	.21
Apathetic	.06	.18	.39	.33
Eigenvalue	7.23	3.67	1.44	1.17
Variance Explained	32.87%	17.43%	8.00%	6.96%

A one-way within-subjects ANOVA revealed that the extent to which participants felt like there was "something wrong with [their] minds" differed significantly between conditions, $F(3, 309) = 113.84$, $p < .001$. Post-hoc contrasts revealed that participants were significantly more likely to feel like there was something wrong with their minds following self-world EI experiences than following the control experience. Specifically, participants felt like there was something wrong with their minds following self-generated self-world EI experiences ($M = 2.58$, $SE = .12$), meaning violation video vignettes ($M = 3.78$, $SE = .11$), and dissociative experience video vignettes ($M = 2.07$, $SE = .13$) to a significantly greater extent than they did following the control video vignette ($M = 1.28$, $SE = .07$), all ps $< .001$.

To determine whether there were significant differences between the outcomes associated with self-generated EI experiences coded as meaning violations and those coded as dissociative experiences, I used a more restrictive coding scheme to identify participants' self-generated EI experiences as meaning violations, dissociative experiences, neither, but not both. Then, I submitted several outcomes of interest to a t-test using this new coding as a grouping variable (Table 2). There were no significant differences between meaning violations and dissociative experiences in mind-world IOS scores, perceived impactfulness, and EI affect. However, participants were significantly more likely to attribute "something wrong with [their] minds" to self-generated meaning violations ($M = 3.13$, $SD = 1.01$) than they were to self-generated dissociative experiences ($M = 2.36$, $SD = 1.32$), $t(89) = 2.87$, $p < .05$. Likewise, participants rated the overall valence of meaning violations ($M = 2.41$, $SD = .67$) significantly more negatively than dissociative experiences ($M = 3.24$, $SD = 1.01$), $t(89) = 4.20$, $p < .001$.

Table 2

Comparisons between self-generated meaning violations and dissociative experiences

	Self-generated EI type	Mean	Std. deviation	*t*	Sig.
MW IOS	Meaning violation	3.50	1.93	.44	.330
	Dissociative experience	3.32	1.79		
Perceived impactfulness	Meaning violation	2.78	1.13	.06	.950
	Dissociative experience	2.80	1.11		
EI affect	Meaning violation	2.37	.97	.06	.949
	Dissociative experience	2.38	1.16		
"Something is wrong with my mind"	Meaning violation	3.13	1.01	2.87	.003
	Dissociative experience	2.36	1.32		
Overall valence	Meaning violation	2.41	.67	4.20	<.001
	Dissociative experience	3.24	1.01		

Note: MW IOS = mind-world adapted inclusion-of-other-in-self scale; Std. deviation = standard deviation; Sig. = *p* value. Overall valence scored as 1 = extremely negative, 5 = extremely positive.

Discussion

This study asked participants to describe personal experiences in which they sensed a "gap" between their minds and the world (i.e., self-world EI). Participants' descriptions consistently involved meaning violations and dissociative experiences. Additionally, participants reported feeling "EI affect" significantly more in the three self-world EI conditions than they did in the control condition. Taken together, these results provide preliminary evidence suggesting that meaning violations and dissociative experiences drive feelings of self-world EI.

Differences in self-generated meaning violations and dissociative experiences emerged. Specifically, participants felt more strongly that there was something wrong with their minds following meaning violations than following dissociative experiences. Likewise, participants rated the overall valance of meaning violations more negatively than they rated dissociative experiences. Insofar as I

used the same "mind-world gap experience" writing task manipulation in studies 1 and 2, these findings highlight the importance of probing and controlling for outcomes uniquely attributable to self-generated meaning violations and/or dissociative experiences.

The pilot study also revealed that people are likely to attribute self-world EI experiences to cognitive errors or impairment. Participants were more likely to believe there was something "wrong with [their] minds" following self-world EI experiences than following a neutral control video vignette. This finding sheds light on an important psychological outcome of EI experiences that is especially relevant to the proposed research. If people commonly attribute self-world EI experiences to cognitive errors or impairment, self-world EI experiences may negatively affect feelings of competence, as I theorized.

Chapter 2: Study 1

The primary aim of Study 1 was to reveal the differences and similarities in outcomes associated with self-other and self-world EI experiences as they relate to basic psychological needs and affective outcomes. Participants were randomly assigned to one of four conditions. In each condition (self-world EI, self-other EI, dental pain, daily routine) participants viewed a video that described a type of experience before writing a detailed passage describing a similar experience from their own lives. Following the writing task, participants completed self-report measures of affect, relatedness, competence, and autonomy. I hypothesized that (1) participants in the self-world EI threat condition should report lower feelings of competence than participants in all other conditions, (2) participants in the self-other EI threat condition should report lower feelings of relatedness than participants in all other conditions, and (3) participants in both EI threat conditions will report higher EI affect than participants in the dental pain and daily routine conditions.

Participants

GPower analysis revealed that a minimum sample size of 390 participants is necessary to detect a small to medium effect size between four groups using a one-way omnibus ANOVA. To account for the possibility of incomplete or inattentive participation, I recruited a total of 437 English-speaking participants via Prolific who completed the study online in exchange for $9.33 per hour. I removed seventy-seven participants from the original sample on the basis of several a priori exclusion criteria. Seventy participants exceeded the lower and upper participation duration limits (5.5 minutes and 30 minutes, respectively). Two participants failed attention checks. Five participants did not follow instructions during the manipulation task (See Appendix F for decision criteria). After removing these

participants, the final sample included 360 participants.[3] The final sample was mostly white (71%), comprised evenly of men and women (53% male, 46% female), and leaned liberal on social and political issues. See Table 3 for a full breakdown of sample demographics.

Procedure

Participants accessed a survey hosted via Qualtrics through the Prolific system portal. After participants completed an electronic informed consent form, they read a brief introduction that provided a vague description of the focus of the study (i.e., "personality and life experience") along with some basic instructions. Following the introduction, Qualtrics randomly assigned participants to watch one of four "thought task" videos (self-world EI, self-other EI, dental pain, or daily routine). Participants in the self-world EI condition then watched a video describing the meaning of "mind-world gap experiences," whereas participants in the self-other EI condition watched a video describing the meaning of "mind-mind gap experiences." Participants assigned to the dental pain condition watched a video describing dental pain and discomfort. Participants assigned to the daily routine condition watched a video describing mundane, daily activities such as folding laundry and checking email.

Qualtrics prevented participants from skipping over or fast-forwarding through the video. All four videos are approximately two minutes long and used the same animation and narration styles. Video transcripts and screenshots can be found in Appendix G.

Following the video, participants responded to a single question, "have you ever had a [mind-mind gap/mind-world gap/dental pain/daily routine] experience?" Notably, 10 participants in the self-other EI condition claimed never to have experienced self-other EI (10.9%) and 6 participants in the self-

[3] The duration criterion ensured participants were not rushing nor disengaged during the experiment. Notably, the results relevant to hypotheses did not change as a function of including/excluding participants on the basis of duration. Study 1 results including duration outliers can be found in Appendix G.

Table 3

Study 1 Sample Demographics by Condition

Characteristic	Self-Other EI		Self-World EI		Dental Pain		Routine		Total	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Gender										
Women	47	51.10	38	44.20	42	46.20	36	39.60	161	45.2
Men	42	45.70	47	54.70	45	49.50	52	57.10	188	51.7
Non-Binary	2	2.20	0	0.00	3	3.3	3	3.30	8	2.2
No answer	1	1.10	1	1.20	1	1.1	0	0.00	3	0.9
Race										
Native American	1	1.1	0	0.0	0	0.0	0	0.0	1	0.3
Asian	13	14.1	7	8.1	10	11.0	10	11.0	40	11.1
Black	13	14.1	10	11.6	12	13.2	7	7.7	42	11.7
White	59	64.1	66	76.7	62	68.1	69	75.8	256	71.1
Other	6	6.5	2	2.3	6	6.6	3	3.3	17	4.7
No Answer	0	0.0	1	1.2	1	1.1	2	2.2	4	1.1
Sexual Orientation										
Gay/Lesbian	4	4.3	9	10.5	7	7.7	9	9.9	29	8.1
Straight	65	70.7	59	68.6	66	72.5	58	63.7	248	68.9
Bisexual	16	17.4	12	14.0	12	13.2	17	18.7	57	15.8
Asexual	1	1.1	0	0.0	1	1.1	2	2.2	4	1.1
Unsure	1	1.1	0	0.0	1	1.1	1	1.1	3	0.8
Pansexual	2	2.2	3	3.5	4	4.4	4	4.4	13	3.6
No answer	2	2.2	3	3.5	0	0.0	0	0.0	5	1.4
Politics										
Liberal	53	57.6	56	65.1	62	68.1	58	63.7	229	63.6
Moderate	22	23.9	15	17.4	19	20.9	16	17.6	72	20.0
Conservative	14	15.2	14	16.3	10	11.0	15	16.5	53	14.7
Religion										
Buddhism	2	2.2	1	1.2	0	0.00	3	3.3	6	1.7
Hinduism	1	1.1	0	0.0	3	3.3	2	2.2	6	1.7
Christianity	30	32.6	37	43.0	30	33.0	36	39.6	133	36.9
Islam	1	1.1	3	3.5	0	0.00	0	0.0	4	1.1
Judaism	1	1.1	0	0.0	3	3.3	4	4.4	8	2.2
Agnostic	28	30.4	23	26.7	26	28.6	20	22.0	97	26.9
Atheist	17	18.5	13	15.1	16	17.6	16	17.6	62	17.2
Other	8	8.7	4	4.7	8	8.8	8	8.8	28	7.8
No answer	4	4.3	5	5.8	5	5.5	2	2.2	16	4.4

world EI condition claimed never to have experienced self-world EI (7%). These participants were then shown a list of examples of self-other or self-world EI experiences, and asked again, "after reviewing these examples, can you think of a time you experienced a [mind-mind gap/mind-world gap]?". Participants who responded affirmatively moved on to describe their experiences. Participants who responded negatively were redirected to a second video that illustrated a hypothetical EI experience corresponding to their assigned condition (for video scripts and screenshots, see Appendix H). After watching the video vignette, participants imagined what it would be like to experience the situation shown in the video and wrote about how the situation would make them feel.[4] All other participants in EI conditions recalled and wrote about an experience from their own lives that reflects the type of experience illustrated in the video they watched. Participants entered their responses in a textbox below the prompt. The purpose of this writing exercise was two-fold. First, it is important to ensure that participants' responses accurately reflect the meanings of the experiences they have been asked to recall. Second, the writing task was intended to enhance the vividness and duration of participants' recalled experiences.

After completing the written reflection, participants responded to a series of questions about their reactions to the events they wrote about. These items included manipulation checks and measures of in-the-moment affect and perceptions of competence, relatedness, and autonomy. To conclude, participants completed a set of basic demographic questions.

Materials

Basic Psychological Needs Scale. To quickly capture participants' *in the moment* senses of competence, relatedness, and autonomy, I truncated and adapted the Basic Psychological Needs Scale

[4] Notably, the general patterns of results, conclusions, and interpretations reported here do not differ between samples including and excluding participants who wrote about video vignettes rather than their own EI experiences.

(LaGuardia et al., 2000). Twenty-one items comprise the original measure (7 items for each dimension), which I reduced to 9 total items (3 items for each dimension) by generating novel items that broadly captured the meaning of the originals. I also adapted the scale instructions by adjusting the prompt to say, "*keeping in mind the experience you wrote about, please read each of the following items carefully and then indicate how true it is for you.*" Participants reported the extent to which they agreed with each item on a seven-point scale (1 = strongly disagree, 7 = strongly agree). Participants' scores were averaged. In the current sample, all three subscales were adequately reliable (α = .71-.87). See Appendix I for a full list of items.

EI Affect. Participants used a five-point Likert scale to indicate their in-the-moment experiences of 10 discreet feelings ("*Keeping in mind the experience event you wrote about, please rate how much you feel the following emotions*"). This measure is comprised of two subscales. The first subscale assesses EI affect (i.e., afraid, detached, disconnected, isolated, lonely), which was internally reliable in the current study (α= .84). The second subscale is comprised of positive affect items taken from the Positive-Negative Affect Schedule (i.e., strong, enthusiastic, proud, excited, inspired). This grouping of items was internally reliable (α= .71). I included this second set of emotions as distractor items. See Appendix J for a full list of items from both subscales.

Results

Bivariate correlations of key variables can be found in Table 4. To test hypotheses 1 and 2, I submitted participants' reported feelings of competence and relatedness to a one-way between groups ANOVA using Tukey's post hoc comparisons entering condition as the independent variable and competence and autonomy as dependent variables. There was not an overall effect of condition on competence $F(3, 356) = [.82]$, $p = .49$ (Figure 2). Likewise, there was not an overall effect of condition on

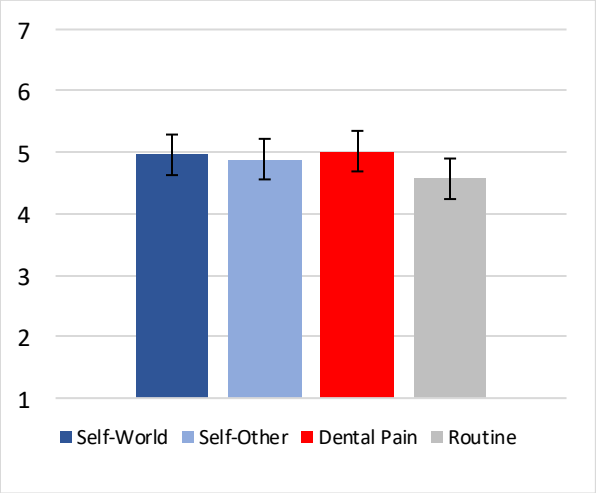
relatedness $F(3, 356) = [.63]$, $p = .60$ (Figure 3). The results of these analyses did not support hypotheses 1 and 2. See Figure 3 for a visualization of conditional means.

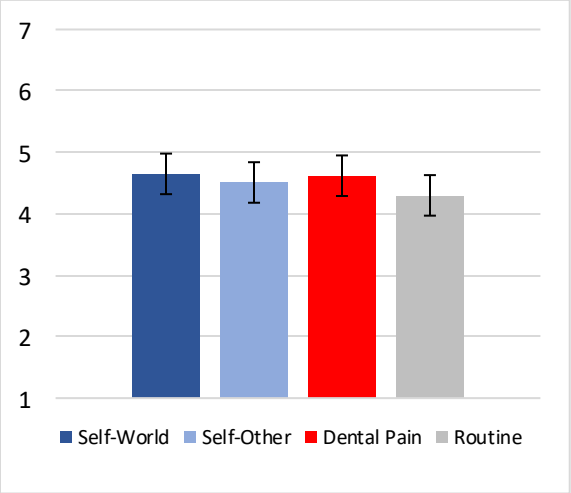
Table 4

Bivariate Correlations Between Key Study 1 Variables

	M	*SD*	1	2	3	4
1. Valence	2.80	1.24				
2. EI Affect	1.85	.89	-.38**			
3. Competence	4.87	1.30	.09	-.16**		
4. Relatedness	5.01	1.17	.04	-.13**	.71**	
5. Autonomy	4.54	1.39	.07	-.16*	.70**	.59**

Note: * denotes $p < .05$, ** denotes $p < .01$





Note: Competence and relatedness were measured on 7-point scales. Error bars represent +/- 1 SE.

Figure 2: *Competence Between Conditions*

Figure 3*: Relatedness Between Conditions*

To test hypothesis 3, I submitted participant's reported feelings of EI affect to a one-way between groups ANOVA using planned contrasts entering condition as the independent variable and EI affect as the dependent variable. There was a significant overall effect of condition on EI affect, $F(3, 356) = [13.76]$, $p < .001$, $\eta_p^2 = .10$. Planned contrasts comparing combined EI conditions (self-world = 1, self-other = 1) and combined control conditions (dental pain = -1, routine activity = -1) revealed that

participants assigned to EI conditions reported significantly more EI affect (*M* = 2.07, *SE* = .10) than participants in the dental pain and daily routine conditions (*M* = 1.81, *SE* = .06), *t*(356) = 4.87, *p* <.001, *d* = .50. Notably, exploratory post hoc analyses revealed that the self-world EI condition (*M* = 2.32, *SD* 1.02) produced significantly more negative affect than any other condition (Figure 4).

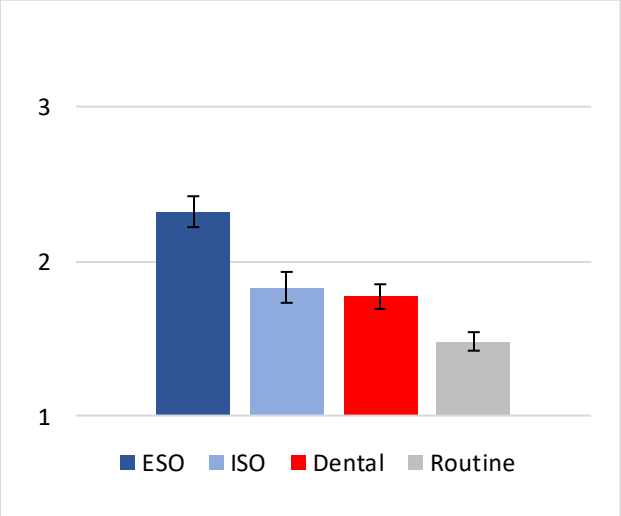


Figure 4: *EI Affect Between Conditions*

Note: EI affect was measured on a 5-point scale. Error bars represent +/- 1 SE.

One explanation for the null effect found in tests of hypotheses 1 and 2 may involve the valence of the EI experiences participants described. Prior research (Pinel et al., 2006; Pinel et al., 2017; Helm et al., 2017) has characterized EI as a psychologically threatening experience. However, the valences that participants attributed to their EI events in the current study suggest that EI experiences are not always negative. Using a single item, participants rated the generic valence (1 = extremely negative, 5 = extremely positive) of self-other (*M* = 2.93, Skew = .37) and self-world (*M* = 2.89, Skew = .31) EI experiences as emotionally neutral, on average. It may be that only when EI produces EI affect does it effectively threaten self-needs like competence and relatedness.

To explore this possibility, I created a binary grouping variable in which the dental pain condition was coded as 0 (n = 91), the self-world EI condition was coded as 1 (n = 86), and all other conditions were treated as missing. Then, I conducted a pair of basic mediation analyses in Hayes' Process Macro (v4.0; 2022), specifying the grouping variable as the predictor, EI affect as the mediator, and competence and relatedness as the outcomes. In both models, the *a* path was significant and positive, the *b* path was significant and negative, and the *c* path was non-significant. However, in both models, the indirect paths were significant from self-world EI experiences to competence (indirect effect = -.14, LLCI = -.29, ULCI = -.02; Figure 5) and relatedness (indirect effect = -.05, LLCI = -.09, ULCI = -.01; Figure 6) through EI affect. I also tested the indirect effect of self-other EI on competence and relatedness via EI affect, but neither model was significant, suggesting that self-other EI experiences may not threaten self needs through EI affect more than dental pain experiences (indirect effect on competence = -.03, LLCI = -.12, ULCI =.05; indirect effect on relatedness = -.02, LLCI = -.10, ULCI = .04).

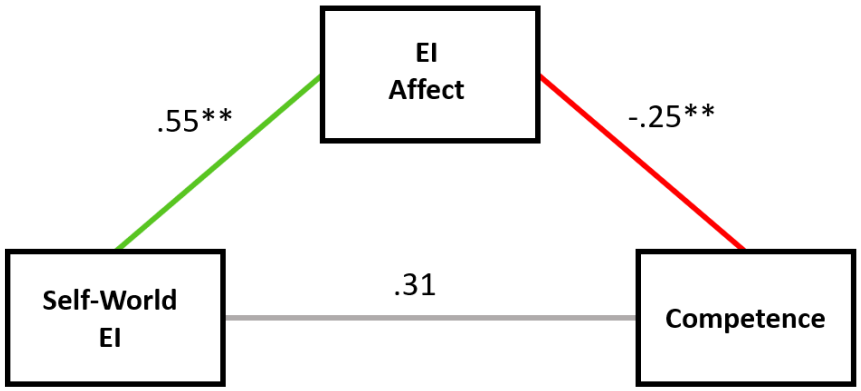


Figure 6*: Indirect Effect of Self-World EI on Competence Need Satisfaction*

***Note*:** This model contrasts self-world EI and dental pain conditions. Indirect effect is significant (-.13, $p < .05$). ** denotes $p < .01$, * denotes $p < .05$.

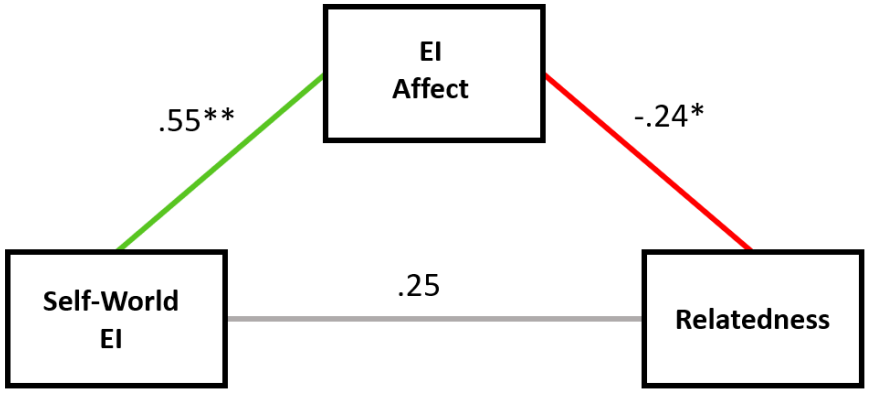


Figure 6*: Indirect Effect of Self-World EI on Relatedness Need Satisfaction*

***Note*:** This model contrasts self-world EI and dental pain conditions. Indirect effect is significant (-.13, $p < .05$). ** denotes $p < .01$, * denotes $p < .05$.

Study 1 Discussion

Study 1 experimentally tested the self-need and affective outcomes related to self-world and self-other EI experiences. Although EI experiences did not directly affect competence and relatedness need satisfaction (hypotheses 1-2), exploratory mediation analyses suggest that self-world EI experiences may threaten feelings of competence and relatedness indirectly through EI affect. However, these models did not replicate in the self-other EI condition.

Consistent with hypothesis 3, a planned contrast analysis revealed that EI conditions caused significantly more EI affect than control conditions. Notably, exploratory post-hoc analysis found that participants in the self-world EI condition experienced significantly more EI affect than all other conditions. Participants in the self-other EI condition experienced significantly more EI affect than participants in the daily routine condition. However, there was not a significant difference in EI affect between the self-other EI and dental pain conditions.

Study 2 sought to replicate and build upon these findings by including a compensatory factor meant to mitigate the EI affect caused by the self-world and self-other EI threat manipulations.

Chapter 3: Study 2

Overview

If self-world and self-other EI are merely disparate paths that lead to the same psychological experience, then methods of ameliorating self-other and self-world gaps should compensate fluidly (Proulx et al., 2012b; Steele, 1988; Tesser, 2001). The primary purpose of Study 2 was to test this reasoning using a 2 (EI threat) x 3 (compensation) design. Participants were randomly assigned to a self-other or self-world EI threat condition, and then completed measures of relatedness, competence, autonomy, and EI affect. Next, participants were randomly assigned to one of three compensation conditions: I-sharing, meaning-making, and control. Finally, participants completed a second measure of EI affect.

Two key hypotheses guided the current study. Hypothesis 1 predicted that recalled self-other and self-world EI experiences should threaten relatedness (Hypothesis 1_a) and competence (Hypothesis 1_b) need satisfaction. As in Study 1, I had no specific predictions about the effects of these manipulations on participants' feelings of autonomy. I included the measure of autonomy exclusively for exploratory purposes. Second (Hypothesis 2), I predicted a three-way interaction between EI threat condition, compensation condition, and EI affect (time 1 and time 2). Specifically, I predicted that the decrease in EI affect from time 1 to time 2 will be greater in the compensation conditions relative to the control condition, irrespective of EI threat condition.

Participants

I recruited participants from the undergraduate subject pool at a university in the Southeastern United States. GPower analysis revealed that a minimum sample size of 366 participants is recommended to detect a small effect using a between-within ANOVA with 12 conditions. However, due to recruitment constraints in the wake of COVID-19, I was able to recruit only 258 participants. Using the same method and criteria from Study 1, I excluded 16 participants from the sample who did not follow instructions during the manipulation. I also removed 10 participants who reported strong suspicion during the debriefing. A total of 232 participants comprised the final sample (71.1 % female). The mean age of participants was 19.03, and the racial composition of the sample reflected that of Southeastern United States (see Table 5 for a breakdown of sample demographics).

Table 5

Study 2 Sample Demographics

Characteristic	Total	
	n	*%*
Gender		
Women	165	28.9
Men	67	71.1
Non-Binary	0	0
No answer	0	0
Race		
Native American	0	0
Asian	52	22.4
Black	32	13.8
White	136	58.6
Other	21	9.1
No Answer	2	.9
Sexual Orientation		
Gay/Lesbian	12	5.2
Straight	169	72.8
Bisexual	26	11.2
Asexual	5	2.2
Unsure	3	1.3
Pansexual	4	1.7
No answer	6	2.6

Procedure

Upon signing up, participants were greeted by an investigator, guided through the consent process, and directed to a PC set up within a personal cubicle. The investigator provided brief instructions for initiating the experimental session and left the cubicle. All further instructions were provided by the PC. It was important to limit contact and communication between investigators and participants to reduce the likelihood of incidental existential connections (e.g., facial mimicry, simultaneous yawning).

The study was hosted via Qualtrics. Written instructions asked participants to put on a pair of over-the-ear headphones. Participants then followed several prompts to verify that the headphones fit comfortably and worked properly.

Next, Qualtrics randomly assigned participants to a self-other EI threat or self-world EI threat condition. The threat conditions were identical to those used in Study 1. Following the threat, participants completed in-the-moment measures of relatedness, competence, and autonomy need satisfaction, and EI affect. Next, Qualtrics randomly assigned participants to an I-sharing, meaning making, or no compensation condition. In all three conditions, participants saw a series of nine ambiguous silhouettes and indicated whether they perceived each silhouette to be facing forward or backward (see Figure 7; Appendix K).

In the *I-sharing compensation* condition, participants were ostensibly linked to another participant whom they believed was completing the same perception task. To enhance the believability of the link, the survey displayed an animated "buffering" screen for thirty seconds while "connecting" participants to their ostensible partners. Once the connection was complete, participants read instructions for the silhouette task that emphasized that there are "*no right answers*." During the task, silhouettes were displayed one at a time. Participants used on-screen buttons to indicate whether they

perceived each silhouette as facing forward (toward the participant) or backward (away from the participant). Following each response, the message, "Waiting on your partner's response…" was shown for a random duration (0.50 – 7.00 seconds). After the delay, participants received feedback: "*your partner agreed/disagreed with your perception*." For a randomly selected seven of nine silhouettes, the feedback indicated that the participants' perceptions matched those of their partners. This procedure reflects common I-sharing manipulations (Long et al., 2021; Pinel et al., 2006; Pinel et al., 2019) and was meant to attenuate feelings of EI.

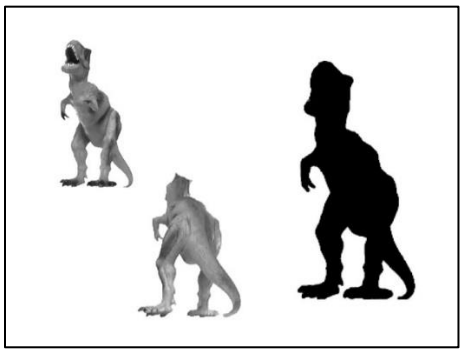


Figure 7: Bistable Silhouette

In the *meaning-making compensation* condition, participants were not paired with an ostensible partner. Instructions told participants they must attempt to *accurately* determine the orientations of the silhouettes. This phrasing suggested there are "right" and "wrong" ways to perceive the silhouettes. Following each response, an image appeared that "filled-in" the silhouette, and either validated or invalidated participants' reported perceptions. For seven of nine silhouettes, the feedback validated participants' reported perceptions.

In the *no compensation* condition, participants did not receive feedback on their responses. Next, all participants responded to a second measure of EI affect. Upon completion, investigators debriefed participants individually and probed for suspicion.

Materials

Basic Psychological Needs Scale. I used the same version of the Basic Psychological Needs Scale (BPNS) used in Study 1 to measure participants' feelings of competence, relatedness, and autonomy. Participants' scores were averaged. In the current sample, the competence (α = .83) and relatedness (α = .82) subscales were adequately reliable. The autonomy subscale, however, did not meet standards of internal reliability (α = .59) and was not used in any planned or exploratory analyses. See Appendix I for a full list of items.

EI Affect. At time 1, participants completed a measure of EI affect identical to that of Study 1 (α = .86). At time 2, participants completed an alternate version that used a 7-point scale and modified visual format to reduce carryover effects (α = .81). The items and endpoint descriptions remained identical to those of Study 1. Prior to all analyses, I transformed the time 1 EI affect scores by multiplying participants' composite scores by 1.4. This linear transformation fixed Time 1 and 2 EI affect scores to the same (7-point) scale.

Results

Bivariate correlations of key variables can be found in Table 6. Hypothesis 1_a predicted that self-world EI experiences should threaten feelings of competence more than self-world EI experiences, and hypothesis 1_b predicted that self-other EI experiences should threaten feelings of relatedness more than self-other EI experiences. Contrary to hypothesis 1, a one-way ANOVA grouping by EI threat condition did not find significant differences in self-need outcomes between EI threat conditions. The self-other (M = 4.99, SD = .96) and the self-world EI (M = 5.07, SD = .91) conditions did not differ in competence $F(1, 230) = .24$ $p = .63$. Likewise, relatedness did not differ between the self-other EI (M = 4.81, SD = 1.29) and self-world EI (M = 4.71, SD = 1.34) conditions $F(1, 230) = .38$, $p = .54$. Overall, these findings do not support hypothesis $1_{a\text{-}b}$.

Hypothesis 2 predicted that the decrease in EI affect from time 1 to time 2 would be greater in the compensation conditions relative to the control condition, irrespective of EI threat condition. To test this hypothesis, I submitted participants' time 1 and time 2 EI affect scores as a within-participants factor (time) to a mixed 2 × 2 × 3 ANOVA specifying EI threat and compensation conditions as between-participants factors. The analysis did not reveal evidence in support of hypothesis 2. Specifically, the predicted three-way interaction was not significant, $F(2, 231) = .53$, $p = .59$, suggesting that the I-sharing and meaning making compensations did not reduce participants' EI affect significantly differently than the no compensation condition (Figure 8; Figure 9). Furthermore, the two-way interaction between time and compensation condition was also non-significant, $F(2, 231) = .97$, $p = .38$. A significant interaction between EI threat condition and time emerged, $F(1,231) = 7.34$, $p < .01$. However, this interaction was largely driven by the effect of self-world EI threat on EI affect at time 1. While EI affect was significantly higher in the self-world EI condition than the self-other EI condition at time 1, conditions did not differ at time 2 (Figure 10).

Table 6

Bivariate Correlation of Key Study 2 Variables Across Conditions

	M	***SD***	**1**	**2**	**3**	**4**
1. EI Affect Time 1	3.20	1.34				
2. EI Affect Time 2	2.22	1.13	.42**			
3. Competence	5.07	1.22	-.27**	-.35**		
4. Relatedness	5.32	1.11	-.27**	-.47**	.68**	

Note: EI Affect Time 1 was transformed to a seven-point scale to enhance interpretability. All other variables were measured on 7-point scales. * denotes $p < .05$, ** denotes $p < .01$

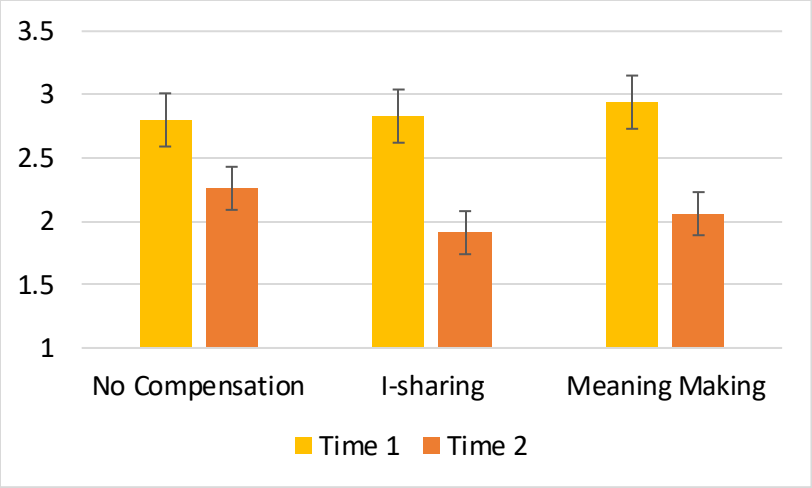


Figure 8: *Self-Other Condition EI Affect at Time 1 and Time 2 Between Compensation Conditions*

Note: EI affect was measured on a 7-point scale. Error bars represent +/- 1 SE.

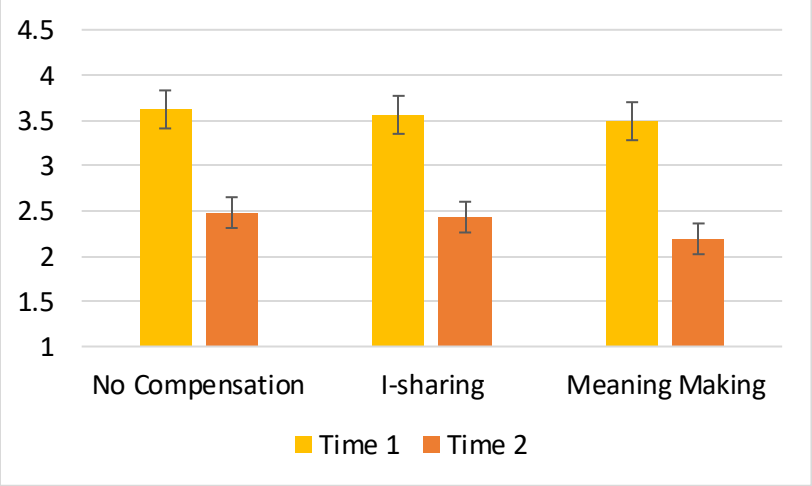


Figure 9: *Self-World Condition EI Affect at Time 1 and Time 2 Between Compensation Conditions*

Note: EI affect was measured on a 7-point scale. Error bars represent +/- 1 SE.

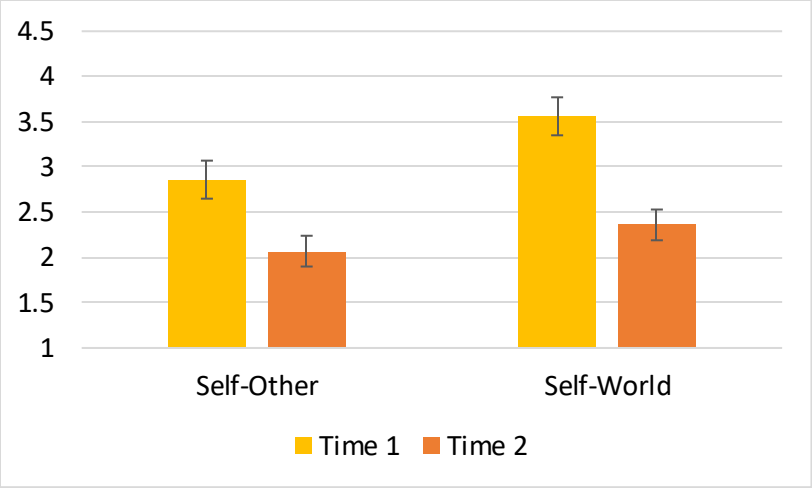


Figure 10*: EI Affect at Time 1 and Time 2 Between EI Threat Conditions*

Note: EI affect was measured on a 7-point scale. Error bars represent +/- 1 SE.

It is worth noting that the sample size in the current study (N = 232) is well below what *a priori* power analysis recommended (N = 336). This disparity is reflected in the observed power for the three-way interaction (.27). For exploratory purposes, I probed for an effect of compensation on time 2 EI affect with a simpler model. Using a one-way ANCOVA, I tested for differences in time 2 EI affect as a function of compensation condition and controlling for time 1 EI affect. There was not a significant overall effect, $F(2, 231) = 1.57$, $p = .21$ (Figure 11).

I also explored whether the mediation model from Study 1 replicated in the current sample. Importantly, the mediation model from Study 1 contrasted a dental pain condition and a self-world EI condition. The current study did not include a dental pain condition, so the mediation model instead contrasted the EI threat conditions. I created a grouping variable in which the self-other EI condition was coded as 0 and the self-world EI condition was coded as 1. Using Hayes Process Macro (v4.0; 2022), I then specified the grouping variable as the predictor, Time 1 EI affect as the mediator, and competence and relatedness as the outcomes. In both models, the *a* path was significant and positive, the *b* path was significant and negative, and the *c* path was non-significant. Moreover, both indirect effects of self-

world EI experiences on competence (indirect effect = -.19, LLCI = -.32, ULCI = -.09; Figure 12) and relatedness (indirect effect = -.19, LLCI = -.33, ULCI = -.08) through EI affect (Figure 13) were significant. These exploratory findings do not precisely replicate the findings from Study 1, but they do offer additional evidence suggesting indirect effects of self-world EI experiences on self-needs via EI affect.

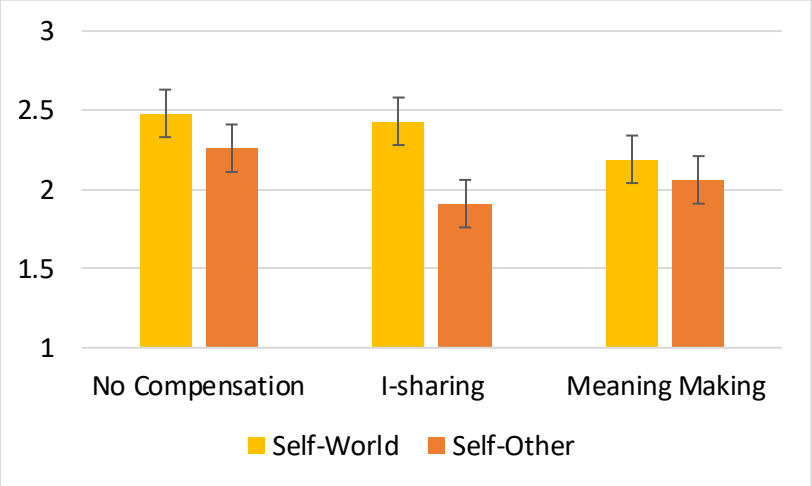


Figure 11*: EI Affect at Time 2 Between EI Threat Conditions*

Note: EI affect was measured on a 7-point scale. Error bars represent +/- 1 SE.

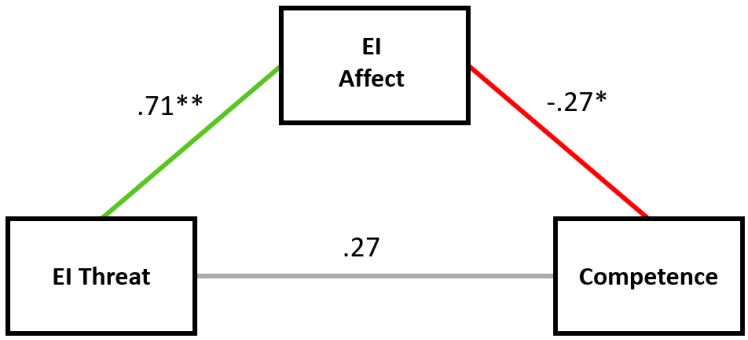


Figure 12: *Indirect Effect of Self-World EI on Competence Need Satisfaction*

Note: This model contrasts self-world and self-other EI experiences. The indirect effect is significant (-.19, $p < .05$). ** denotes $p < .01$, * denotes $p < .05$.

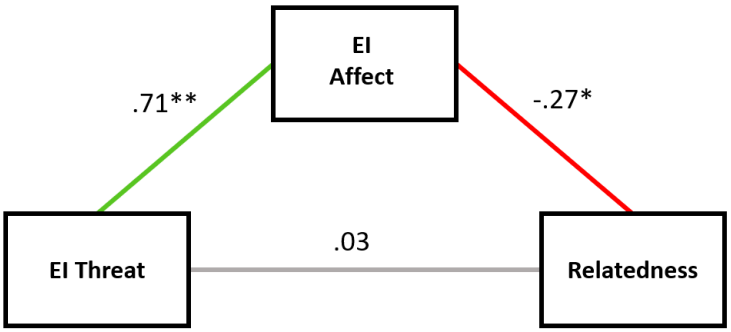


Figure 13: *Indirect Effect of Self-World EI on Relatedness Need Satisfaction*

Note: This model contrasts self-world and self-other EI experiences. The indirect effect is significant (-.19, $p < .05$). ** denotes $p < .01$.

Chapter 4: General Discussion

Summary of Key Findings

The current research aimed to broaden and deepen the current conceptualization of EI to include the experience of the ontological gap between the mind and world. A pair of pilot studies found that experiencing the gap between the mind and world (i.e., self-world EI) is a relatively common psychological event that is associated with a unique profile of negative emotions (afraid, disconnected, detached, isolated, and lonely), which I call "EI affect." Study 1 found that recalling self-world and self-other EI experiences caused more EI affect than recalling dental pain and daily routine experiences. Study 1 also found that recalling EI experiences did not directly threaten self-needs like competence and relatedness. However, follow-up analyses suggested that recalling self-world (but not self-other) EI experiences may indirectly threaten self-needs through EI affect. Study 2 generally replicated these findings. Recalling self-world EI experiences caused more EI affect than recalling self-other EI experiences. Likewise, recalling self-world EI experiences indirectly threatened relatedness and competence self-needs through EI affect. Study two also tested whether I-sharing and meaning making fluidly compensate for EI affect. Contrary to key hypotheses, I-sharing and meaning-making did not ameliorate EI affect more effectively than a control task.

Interpretation of Findings

The primary purposes of the current research were to (1) explore the possibility that self-world and self-other EI derive from the same existential concern, and (2) test whether I-sharing and meaning making ameliorate the affective outcomes associated with EI experiences. Generally, the current research did not find strong evidence that self-world and self-other EI derive from the same existential

concern. Likewise, the current research did not find any evidence that I-sharing and meaning making mitigate EI affect.

If self-world and self-other EI derive from the same existential concern, their affective outcomes should be comparable. Across both studies, self-world EI conditions produced significantly more EI affect (afraid, disconnected, detached, isolated, and lonely) than self-other EI conditions. This finding may suggest that self-world and self-other EI produce the same profile of affect, but this affect tends to be stronger following self-world EI. However, recalling a self-other EI experience did not produce more EI affect than recalling a dental pain experience. If the affective outcomes of self-world and self-other EI are less similar than the affective outcomes between dental pain and self-other EI, then perhaps self-world and self-other EI do not derive from the same existential concern. Despite these findings, it is impossible to theoretically disentangle self-world and self-other EI. Future research should continue to investigate the relationship between these types of experience.

I-sharing and meaning making forge connections between oneself and others and oneself and the world. Therefore, such experiences should effectively compensate for EI. However, the current research found that I-sharing and meaning making did not reduce EI affect significantly more than a distractor task. This could mean that I-sharing and meaning making are not especially effective in mitigating EI. However, this conclusion is counterintuitive and difficult to explain. So, I am confident in considering at least two alternative explanations. First, it could be that the no compensation condition distractor task provided an engaging opportunity for participants to make meaning. The instructions for the distractor task asked participants to report whether they perceived the object in each silhouette to be facing toward or away from them and provided no feedback about the correctness or normality of participants' responses. These instructions imply there are no wrong or disagreeable answers, allowing participants to project meaning onto an otherwise ambiguous set of stimuli. Perhaps this alternative act of meaning making reduced EI affect to an extent comparable to that of the I-sharing and meaning-

making compensation conditions. The second alternative explanation could be that the ameliorating effects of I-sharing and meaning-making were stymied by the two items in each condition on which participants received negative (incorrect/disagree) feedback. During debriefings, participants often fixated on these items, expressing frustration, confusion, and some degree of suspicion. Perhaps the same manipulation in which participants receive exclusively positive (correct/agree) feedback on a believable but meaningful number of items (e.g., 5) would more effectively ameliorate EI.

In addition to these alternative explanations, there are possible alternative methods future research could employ that might better elucidate the nature of self-world EI. For example, Young and Bosson (2023) developed a preliminary self-report measure of self-world EI and found that it was negatively related to competence and relatedness need satisfaction. The same study found that a validated measure of self-other EI (Pinel et al., 2017) was also negatively related to these outcomes. Findings like these suggest that individual differences in self-world and self-other EI may moderate the effect of EI experiences on self-need outcomes. Specifically, it could be that EI experiences threaten competence and relatedness need satisfaction only among people who are higher in trait EI. Follow-up research can test this possibility by employing the same methods used in the current research while including individual difference measures of self-world and self-other EI as moderators.

However, it could be that discreet EI events do not threaten competence and relatedness, as hypothesized. Although past research has shown that people's in-the-moment sense of self-determination need satisfaction can change as a function of experimental treatments, these studies have mostly targeted feelings of competence and relatedness relative to a specific domain (e.g., Eisenberger et al., 1999; Halvari & Halvari, 2006; Sweeney et al., 2014). Research that measures changes in *general* self-determination need satisfaction is often longitudinal (Reinboth & Duda, 2006; Sheldon et al., 2007). These trends suggest that general feelings of competence and relatedness may not fluctuate as a function of discrete experiences. Therefore, it is possible that repeated experiences

resulting in chronic feelings of EI are likely to diminish self-determination need satisfaction over time (Helm et al. 2019 make a similar prediction). With this possibility in mind, perhaps follow-up research seeking to investigate the *immediate* effects of EI experiences should test outcomes that are more likely to be affected *in-the-moment*. For example, worldview defense is an outcome typically associated with existential concerns. There are sufficient theoretical and empirical connections between existential concerns and worldview defense that Van den Bos (2009) proposed a "worldview defense zoo" concept in an attempt to integrate these connections. Indeed, experimental manipulations that prime distal mortality salience (Greenberg et al., 1986; Pyszczynski et al., 2004) and meaning violations (Proulx et al., 2010) have been shown to affect participants' in-the-moment worldview defense and personal need for structure, respectively. The experience of EI is especially relevant to personal beliefs. For instance, chronic feelings of self-other and self-world EI predict less confidence in the accuracy of one's perceptions and memories (Pinel et al., 2022; Young & Bosson, 2023). Perhaps when people feel less certain about their construals of the world, they will also feel less motivated to defend their worldviews. Thus, it is possible that experiences of EI may also affect worldview defense, albeit in a different direction from other existential concerns and by way of a unique mechanism.

A follow-up study could test this prediction. For example, researchers could randomly assign participants to experimental conditions that prime self-world EI, self-other EI, mortality salience, or dental pain. Following the manipulation, participants complete measures of death thought accessibility (DTA; Helm et al., 2019), self-other EI (ISO; Pinel et al., 2017), and self-world EI (ESO; Young & Bosson 2023), before completing a measure of worldview defense (e.g., resistance to desecrating worldview symbols, recommended punishments for worldview infractions). I would predict that worldview defense would be higher in the mortality salience condition relative to the dental pain condition, and that this effect would be driven by DTA. Additionally, I would predict that worldview defense would be lower in the EI conditions relative to the dental pain condition, and that this effect would be driven by

ESO and ISO. However, given how little is known of self-world EI, I am not totally confident in this second prediction. It also seems reasonable to predict that an EI experience should motivate worldview defense as a compensatory reaction. Self-world EI experiences are likely to threaten personal need for structure. Perhaps when personal need for structure is higher, people require stronger compensation for self-world EI experiences, which motivates worldview defense. Therefore, the inclusion of a measure of personal need for structure may prove to be an informative moderator in this proposed design. Overall, a design like this could differentiate the effects of self-world EI from those of other existential concerns while elucidating at least one of its immediate psychological outcomes.

Although the current research did not find support for its primary aims, there are still several meaningful takeaways. The connection between self-world EI and EI affect that emerged in the pilot studies replicated in Studies 1 and 2. This constitutes compelling evidence that self-world EI experiences produce this unique set of feelings. Furthermore, exploratory mediation analyses suggested that self-world EI experiences may indirectly threaten self-need satisfaction through EI affect. Study 2 learned that EI affect associated with recalled EI experiences quickly fades during I-sharing, meaning making, or a neutral perception task. Finally, and perhaps most surprisingly, the current research found that EI experiences can be positive. Many participants described their EI experiences as moments of awe and intrigue. Others described their experiences as pleasantly surreal. This finding is important and warrants further investigation. However, I suspect that EI as a state is more likely to be positively valanced than EI as a trait. While individual instances of EI can be interesting and pleasant, it is difficult to imagine the same for a chronic sense of EI. Although there are unique conditions under which EI may be positively valanced or even adaptive trait, I expect that chronically feeling detached from the world and others will negatively relate to well-being, in general.

There may be important clinical applications associated with the proposed research, as well. Self-other EI predicts several undesirable outcomes such as depression (Constantino et al., 2019), death

thought accessibility (Helm et al., 2019), suicidal ideation, and loneliness (Helm et al., 2020). Although the current research found significant differences between self-other and self-world EI across a variety of key variables, the conclusion that these experiences derive from the same existential concern remains plausible. If self-other and self-world EI experiences stem from the same existential concern, it is reasonable to expect that their relationships with clinical outcomes will often be comparable in quality and severity. Thus, the line of research initiated here will be useful to clinicians. For example, better knowledge of the individual differences and environmental factors that precipitate self-world EI may be helpful to clinicians treating patients suffering from dissociative disorders. This is especially important considering the frequency of diagnoses of dissociative disorders has increased in recent decades, and almost all psychiatric disorders involve dissociative symptoms (Sar, 2011).

The unexpected discovery of positive EI experiences may open new therapeutic avenues. Dissociation often emerges as a psychological defense against traumatic experiences (Van der Kolk & Fisler, 1995). Generally, dissociation is thought to be a maladaptive method of coping (Mahoney & Benight, 2017). However, it is possible that expanding our understanding of positive EI experiences could inspire adaptive methods of detaching from the world through careful exercises of dissociation. For example, salutary experiences like flow (Nakamura & Csikszentmihalyi, 2020) and meditative detachment (Sugiura & Sugiura, 2014) involve dissociation and a sense of disconnection from the world. Thus, combining knowledge of positive and negative EI experiences may enhance clinicians' ability to better understand and treat patients whose conditions are related to EI.

Limitations

The current research was subject to a handful of methodological and theoretical limitations. There are four methodological limitations I will discuss, here. First, it remains unclear whether *recalling* EI experiences is effectively identical to *experiencing EI*. Although past research has used this method to

manipulate self-other EI (Helm et al., 2019; Pinel et al., 2006), there is compelling evidence that memories of affectively charged events are often inaccurate (See Kensinger, 2009 for a review). More importantly, attempts to recall (i.e., to "*re-feel*") the very emotions one felt during past events are subject to a variety of biases (Levine & Safer, 2002; Thomas & Diener 1990). Ultimately, it remains unclear whether the conclusions of the current research generalize to lived EI experiences.

Second, the current research tested outcomes associated with in-the-moment EI experiences, which may not generalize to trait level experiences of EI. Helm et al., 2019_b proposed a conceptual model of self-other EI involving state and trait level experiences. They allege self-other EI derives from discrete events, such as a prolonged argument with a close relationship partner. To the contrary, chronic feelings of self-other EI are more akin to Ratcliffe's (2008) "existential feelings," by which the individual perceives a trait-level disparity between their own subjective experiences and the subjective experiences of others, either by virtue of repeated instances of state self-other EI or some combination of environmental and individual differences. There is no obvious reason to discount the possibility that people experience self-world EI as a state and trait. Given that Studies 1 and 2 manipulate state EI, rather than trait EI, the results of the current research are limited to this extent.

Third, the samples comprising the current research were socioculturally homogenous. This is an important limitation relating to the external validity of the results because the valence and meanings of EI experiences may differ cross-culturally. For example, there is considerably less stigma associated with dissociative experiences among certain East African populations (Edgerton, 1966; Makanjuola et al., 2016). Perhaps people belonging to these cultures construe EI more positively than people belonging to cultures in which dissociation remains stigmatized. Likewise, classical Hindu philosophy regards detachment from the world (i.e., *vairagya*) as a hallmark of enlightenment (Lindtner, 1993). Perhaps subscribers to such philosophies may assign significant value to EI experiences irrespective of valence.

Since cultures differ in their treatment of this existential concern, it is important not to presume that the findings of the current research should replicate cross-culturally.

Fourth, Study 2 was considerably underpowered. A larger sample would provide more reliable answers to key research questions.

In addition to the methodological limitations discussed above, there are at least two theoretical limitations relevant to the current research. First, the driving theoretical model is grounded in the assumption that the mind and world are ontologically distinct. This assumption conflicts with many prominent theories of consciousness. For instance, identity theory of consciousness argues that conscious "mental states" are utterly identical to the physiological "brain states" by which they *appear to be* underwritten; everything is physical (Feinberg, 1966). Ontological idealism argues in a different direction, maintaining that consciousness is the fundamental nature of reality; everything is qualia (Merrel-Wolff, 1973). These monistic construals of reality contradict the dualistic one presumed by the theory proposed herein. However, even if we assume that identity theory and ontological idealism are true, the identity theorist and the idealist remain unable to guess the number of which the other is secretly thinking! Neither can they objectively refute the possibility of their being brains-in-vats! In the scope of lived experiences, an ontological gap between minds (and indeed, between minds and the world) seems apparent. Thus, it is no wonder that people intuitively partition mental and physical modes of being in their construals of themselves and the world, regardless of culture and education (Chudek et al., 2013; Cohen et al., 2011). This suggests that questions about the "true" nature of conscious experience may be irrelevant to the experience of existential isolation, after all.

Second, the theory and specific predictions guiding the current research inherited the prevailing assumption that EI experiences are predominantly negatively valanced. However, exploratory qualitative analyses and participants' own valence ratings of the EI experiences they described suggest

that EI experiences are often neutrally or even positively valanced. A comprehensive theoretical model of EI must take into account the meanings and functions of such experiences.

Future Directions

Along with the other existential concerns, EI is thought to be "existential" insofar as it is thought to apply by virtue of sheer existence. That which broadly applies to the human condition is relevant to all individuals and groups. Thus, the proposed research opens a novel and universally applicable avenue of insight into interpersonal and intergroup relations. There is an inspiring variety of directions that future research can pursue.

There are questions about the validity of the thought-task manipulation used in the current research. It would be beneficial to develop an efficient method of implicitly generating self-world EI experiences. The panel of bistable silhouettes used in Study 2 may be useful for such a purpose. During Study 2 debriefings, it was not uncommon for participants to fixate on the silhouette perceptions on which they received (ostensibly) negative feedback. This suggests that reversing the ratio of positive and negative feedback (from 7/9 correct to 7/9 incorrect) may provoke feelings of self-world EI. As qualitative data from the pilot studies suggests, apparently misperceiving the world may lead to feelings of being disconnected from it.[5]

There are psychologically relevant epistemic implications of self-world EI. For example, self-world EI may be associated with pluralistic attitudes. This could be especially important as ethnic and cultural diversity increase throughout modern societies. On one hand, feelings of self-world EI may inhibit worldview defense. When people feel disconnected from the world, they may feel less dogmatic about their perceptions and beliefs and thus less willing to defend their worldviews. On the other hand,

[5] Seventeen percent of participants' descriptions of self-world EI experiences involved perceptual errors.

pluralistic attitudes derived from perceiving others as mere "figments" of one's own conscious experience —or as inhabiting subjective worlds alien to one's own— may amplify dehumanizing attitudes and antisocial behaviors. For example, pluralism is negatively associated with moral concern (Rai & Holyoak, 2010) and positively associated with rationalization of cyber-smearing behaviors (Workman, 2012). With this much at stake, future research involving EI should investigate whether self-world EI predicts pluralistic attitudes, emphasizing the downstream outcomes related to dehumanization and moral decision-making.

Self-world EI may also be relevant to the experiences of immigrants and their children. After emigrating to a new country, immigrants often end up feeling caught between the worlds of their native and host countries' cultures (Freeman et al., 2001; Lorick-Wilmot, 2014; Vesely et al., 2019). It seems highly probable that self-world EI characterizes such experiences. Investigating this possibility may reveal novel and effective methods of helping immigrants to harmonize apparently disparate cultural identities.

Future research should also aim to develop a measure of self-world existential isolation that captures the construct as a trait level experience. As previously argued, the experiences and functions of state and trait self-world EI may significantly differ. For example, a single instance of self-world EI may not be enough to threaten one's general sense of competence or relatedness. However, self-needs like competence and relatedness may indeed suffer under circumstances in which one feels chronically detached from the world. Additionally, state and trait self-world EI may arise from unique sets of causal factors. For example, a single interaction with a digital interface may be unlikely to cause state self-world EI. However, repeated and prolonged engagement with digital interfaces may contribute to trait self-world EI. A measure of self-world EI as an individual difference is necessary in order to explore such possibilities.

Conclusion

The current research makes a first attempt at scientifically exploring the experience of the ontological gap between the mind and world. Although evidence to support key hypotheses was not found, several important conclusions can be inferred from the results. While there is no "proving" the existence of a construct, and no feasible test to falsify the proposition of a construct's existence, the findings of the current research have shown that self-world EI is an experience that laypeople relate to. Likewise, there is some consistency in the emotional profile associated with such experiences. Self-world EI causes people to feel afraid, detached, disconnected, isolated and lonely (i.e., EI affect), which may in turn threaten self-need satisfaction. Importantly, EI affect dissipates somewhat rapidly during I-sharing, meaning-making, and neutral perception tasks. However, it remains unclear whether it was these conditions or merely the passage of time that explained reductions in EI affect. Participants' written records of past EI experiences revealed that EI can be positively valanced, which challenges long-held theoretical assumptions. The study also generated valuable methodological insight into the manipulation and measurement of a previously unexplored construct. Despite the lack of support for key hypotheses, I hesitate to wholly reject the proposed theoretical model. The predictions of the model logically cohere and track intuition, and limitations of the current research preclude falsification of these predictions. Therefore, I suggest that future research draw from the current studies to make better-informed attempts at testing the theoretical model of EI proposed herein.

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Appendix A: Self-Generated Existential Isolation Experience Reflection Questionnaire

Thank you for your description. The following questions are going to ask you about the experience you've described. Please keep this experience in mind as you answer the following questions.

In a sentence or two, how did this experience make you feel?

[text entry]

Rate the extent to which this experience made you feel as though there was something wrong with your mind:

- 1 Not at all
- 2
- 3
- 4
- 5- Very much

Rate the extent to which this experience made you feel as though there was something wrong with reality:

- 1 Not at all
- 2
- 3
- 4
- 5- Very much

How long ago did this event occur? (For example, if it was a year and half ago, enter 1 year and 6 months.)

Years: [text entry]
+ Months: [text entry]

How often do you think about this event?

- Never/almost never
- Once a year
- Once a month
- Once a week
- Every day

How impacted did you feel by this event?

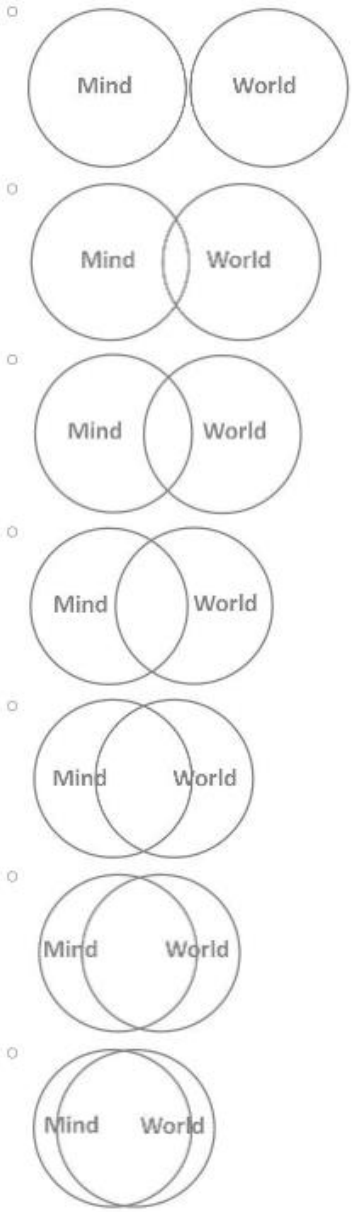
- 1- Not at all impacted
- 2
- 3

- 4
- 5- Strongly impacted

Was this event a positive or negative experience?

- 1- Very negative
- 2- Somewhat negative
- 3- Neither negative nor positive
- 4- Somewhat positive
- 5- Very positive

Please choose the pair of overlapping circles below that best describes the relationship between your mind and the world during the experience you wrote about:



Appendix B: Adapted Positive and Negative Affect Schedule Short Form

Keeping in mind the event you wrote about, please rate the extent to which you experienced the following emotions:

- Interested

  Very slightly or not at all *A little* *Moderately* *Quite a bit* *Extremely*

- Distressed
- Excited
- Upset
- Strong
- Guilty
- Scared
- Hostile
- Enthusiastic
- Proud
- Irritable
- Alert
- Ashamed
- Inspired
- Nervous
- Determined
- Attentive
- Jittery
- Active
- Afraid
- Uncertain
- Frustrated
- Confused
- Disconnected
- Detached
- Aloof
- Nauseous
- A chill
- Isolated
- Lonely

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. Journal of personality and social psychology, 54(6), 1063.

Appendix C: Pilot Study Qualitative Coding Scheme

Meaning Violations: interrupted relations between objects and ideas; violated expectations

Coding Categories: 0 = no, 1= yes

Basic examples:

- Attempting to solve an unsolvable anagram
- Finding out a friend/colleague is much younger/older than previously thought
- Viewing or contemplating absurd art
- Watching a movie from childhood, and it's not as you remember
- Revisiting a relative's house after many years, and it's not as you remember
- Seeing or hearing something, turning to look, and nothing is there
- A raindrop falls on you when the sky is sunny and cloudless

Here are some examples of meaning violations given by participants:

1. *As a child, I knew 100% my favorite video game was the Chicken Little video game. Every day when I was a child, I would wake up and rush over to my PlayStation to play it. I recently decided I wanted to re-experience the story and see if it lived up to my hype during my childhood. I was overwhelming disappointed at the results of the game. It had an extremely lack luster story, it was full of bugs, and overall I did not have a fun time. It truly makes me wonder why my mind made the game seem so amazing when in reality it is a terrible game.*

2. *I have been working at the same golf course for 4 years now. The golf course is several acres and home to many different animals and species that I come across on a daily basis. Sadly, it's not unusual to see a dead animal decomposing somewhere on the golf course. There was one summer when a big hurricane was coming and I remember specifically feeling and eery and on-edge feeling days before the storm. I knew I would be out of work for a few days because of the hurricane so there was one day that I went in a little bit earlier than usual (around 11 AM) to get some extra work done. Upon arriving to work I noticed a deceased black crow in the middle of a fairway. Looking at that bird gave me chills and sent a depressed but also serene feeling through my body. I figured the weather was just messing with my emotions and carried on with my work. Later that day as I was leaving work I passed that same crow on the ground and got a good look at it before left work for what would 3 or 4 days. As I got in my car and proceeded to drive home, I noticed a bird laying near the side of the road. What was strange though, was that this bird was similar in size to the one I had seen earlier. I continued to drive home but my mind was stuck on the fact that I had seen what appeared to me as the same bird in two different places. When I got to a red light I decided to turn around and get one more closer look at what I had just seen.*

When I got back to the location of the dead crow, not only was it nowhere to be found but there was an alive and well crow standing inches from where I had seen the dead one.

3. *I have had an in-mind world gap experience, my experience has happened to me one time. I have many mind world gap experiences but this has been an experience that I still cannot describe. I was 8 years old at the time, I was outside with my dad. I remember that on that day it was very sunny, my dad was taking off my training wheels on my bicycle. My house was in a roundabout, and my neighbors were far away, there was no one outside that day. As my dad was taking off my training wheels I run to the middle of the roundabout and began looking at the sky. My dad had a clear view of me, he was staring at me while I was in the roundabout. When I was done looking at the sky I look to the left side of where I was standing. While I turned to look at my side, I see a man standing there in front of me. I can still remember what he looks like and what he wore. The man had an orange shirt and had khaki cargos. While I'm staring at the man for a quick ten seconds all of a sudden I turn to my right cause I heard a sound and when I went back to turn to my left the man was nowhere. I ran to my dad, who was staring at me the entire time, and he never saw anyone in front of me. The roundabout where my house was, was really big, if there was someone my dad would've saw him. To this day I still can't describe that experience. I felt like what I saw was not real at that moment or that my eyes were playing tricks on me. I have never had another similar experience to that moment, I have seen something move in the corner of my eye but when I looked there was nothing. But this experience is something that I can't describe because to physically see someone there and then I turned around quickly and there was no one there, made me question myself and made me feel like I was dreaming.*

4. *I live on my own so this tends to happen quite a lot. A few days ago about 10am, was sitting in my racing simulator chair after completeing a race. While waiting for the results to appear on screen out of the corner of my eye I could swear I my cat sitting in the floor next to me. I look to call him over and my cat was no where to be seen. I was a little confused so I got up to start looking for him. I found him sleeping on my bed. So i summed it up to my mind playing trick on me.*

Dissociative Experiences: perceptions that one is “cut off” from reality and/or their person

Coding Categories: 0 = no, 1= yes

Basic Examples:

- Feeling like you’re watching yourself, as if in 3rd person
- Failing to recall segments of your day
- Vividly and/or deeply daydreaming (i.e., “mind wandering”)
- Contemplating whether reality is a simulation or dream
- Perceiving reality to be flat, wooden, lifeless, inauthentic, far away, foggy
- Feeling like your trapped in a glass jar, looking at reality through a lens
- Doubting the authenticity (not accuracy) of a memory
- Experiencing Déjà vu

- Waking from a vivid dream

Here are some examples of dissociative experiences given by participants:

1. *Multiple times I have experienced deja vu or feeling like I have experienced something before. Many times it feels like I may have experienced it in a dream but at the same time feels like I am repeating something I have already done. The majority of the times that I have felt this was doing small tasks, like getting water while a conversation is going on, that I already know what the other person is going to say. This is probably the most common experience. I feel like I have had the conversation before and can tell what the person will respond to anything I say. Even if I consciously change what I was "supposed" to say, I know the alternative to what they would say.*

2. *I have "deja vu" a lot if I can refer to it like that. When I was very young, I had a dream of the exact scenario when I learned to ride my bike without training wheels, and the next day I did the exact same thing, the same outcome, my parents were in the same spot, all of it. Also very subtle things of being able to almost predict what will happen in the very near future, because it seems I've lived it before. Sometimes it feels like I'm just looking through the eyes of the person in this body like there's a disconnect from my actual mind to the world.*

Dissociative Meaning Violations: meaning violations that involve dissociation

Coding Categories: 0 = no, 1= yes

Basic Examples

- Suddenly having abilities or skills you did not previously have
- Locating an object in an unexpected place
- Feeling so afraid or startled by an unexpected or ambiguous stimuli that dissociation occurs

Here are some examples of dissociative meaning violations given by participants:

I got off work one night and came home looking for a dress I wanted to wear to go out with friends. I sat my phone down on my brothers bed as I searched for the dress. Once I found it I showered did my hair and makeup and was ready to leave. I realized I didn't know where I put my phone. I began looking frivolously for it. I eventually found it on my brothers bed where I initially left it but, I had no recollection of ever setting it down there.

I went tot Walmart to get some formula for my newborn. I thought I parked my car in the location near the pick up delivery. Then when I left Walmart I notice that my car was not there. I tried so hard to remember where I parked. So as I was panicking looking for the car there was this cart pusher at Walmart that notice I needed help. He asked if everything was okay and I told him what I was going through because I k is I wanted to park near pick up delivery location. We looked for almost 15 minutes and then finally found my car. It was in the first isle once you walk out third car in. I still do not know how I parked there when I convinced myself to park elsewhere. It literally bothered me for days.

Appendix D: Factor Loadings For All PANAS Items Across All Conditions (Pilot Study)

Self-Generated EI Condition EFA

Rotated Factor Matrix[a]

	Factor				
	1	2	3	4	5
interested	.017	.748	-.148	.129	-.286
distressed	.665	-.190	.458	.232	-.030
excited	-.015	.864	-.052	-.040	-.023
upset	.372	-.242	.590	.052	.065
strong	.041	.596	-.025	-.001	.216
scared	.858	.009	.129	.195	-.109
enthusiastic	.039	.796	-.030	-.061	.035
irritable	.501	-.132	.601	-.084	.168
alert	.450	.387	.206	.042	-.329
inspired	-.030	.883	-.022	-.052	.107
nervous	.796	.011	.238	.203	-.124
afraid	.752	.074	.133	.367	-.007
frustrated	.083	-.026	.846	.148	.041
confused	.338	.002	.295	.243	-.364
disconnected	.338	-.196	.151	.718	.023
detached	.187	.041	.049	.740	-.013
nauseated	.586	-.041	.361	.048	.182
a "chill"	.609	.377	.005	-.066	-.036
isolated	.665	-.040	.051	.571	.256
lonely	.717	.007	.032	.347	.292
bored	.100	.112	.324	.130	.599
apathetic	.080	.173	.308	.293	.275

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Dissociative Experiences Condition EFA

Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
interested	.203	.652	-.137	.134
distressed	.765	-.090	.216	.429
excited	.065	.808	.148	-.012
upset	.617	.047	.262	.205
strong	-.007	.589	.314	.257
scared	.766	-.069	.239	.410
enthusiastic	.050	.791	.176	-.080
irritable	.542	.028	.577	.128
alert	.377	.301	.001	.550
inspired	-.042	.758	.077	-.014
nervous	.687	-.034	.258	.512
afraid	.734	-.150	.281	.426
frustrated	.533	.017	.417	.189
confused	.656	.132	-.056	.226
disconnected	.879	.115	.048	.071
detached	.782	.181	.008	.050
nauseated	.436	.176	.544	.335
a "chill"	.141	.492	.135	.425
isolated	.801	.143	.195	-.077
lonely	.752	.130	.199	-.097
bored	.106	.172	.656	-.108
apathetic	.108	.148	.592	.122

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Meaning Violation Condition EFA

Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
interested	.310	.370	-.031	-.333
distressed	.681	-.041	.379	.011
excited	.046	.793	-.001	-.023
upset	.312	.066	.776	.098
strong	.034	.720	.013	-.119
scared	.860	-.103	.149	.078
enthusiastic	.055	.727	-.080	.004
irritable	.133	-.006	.838	.101
alert	.699	.029	.198	-.220
inspired	.104	.779	.003	-.072
nervous	.832	-.018	.194	-.042
afraid	.869	-.073	.125	.175
frustrated	.261	.086	.764	-.050
confused	.463	-.205	.400	-.164
disconnected	.606	.094	.363	-.061
detached	.647	.117	.249	-.044
nauseated	.413	.432	.330	.447
a "chill"	.630	.207	-.042	-.021
isolated	.662	.309	.149	.166
lonely	.589	.387	.060	.373
bored	-.066	.702	.113	.140
apathetic	.018	.708	.090	.253

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Daily Routine Condition EFA

Rotated Factor Matrix[a]

	Factor				
	1	2	3	4	5
interested	.067	.202	.672	.038	-.270
distressed	.585	.526	.121	.454	-.019
excited	.015	-.070	.846	-.001	-.109
upset	.744	.212	.061	.134	-.148
strong	.159	.187	.506	.201	.159
scared	.464	.475	.160	.622	-.028
enthusiastic	.055	.098	.787	-.089	.047
irritable	.845	.161	.133	.056	.109
alert	.297	.368	.353	.120	-.051
inspired	.134	-.058	.745	.128	.254
nervous	.811	.275	.142	.224	.071
afraid	.377	.584	.237	.505	.107
frustrated	.843	.220	.121	.075	.094
confused	.618	.395	-.013	.221	-.319
disconnected	.299	.673	.038	.274	.116
detached	.486	.691	.031	.119	.144
nauseated	.694	.188	.175	.348	.365
a "chill"	.098	.138	.030	.527	.017
isolated	.403	.617	.049	.109	.345
lonely	.129	.698	.118	.142	.185
bored	-.042	.164	.015	-.027	.452
apathetic	.107	.077	-.020	.200	.239

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Appendix E: Qualitative Examples of EI Affect

1. Weird and frightened.
2. It made me feel odd, as if I were not in complete control of my body (which moved on its own) nor my thoughts (which I felt followed emotion and did not have any reason backing it up).
3. These made me feel like I'm not in touch with reality all of the time and it is incredibly frustrating. Mostly because sometimes people will tell me I've done things that I don't remember doing.
4. The experience made me feel very uncomfortable and confused. I would not say I was afraid in the moment but it was enough to have me feel uneasy and vulnerable.
5. Put simply, odd and out of place. Some more symptoms included a feeling of lightness with an odd pulling, and I guess dizziness without the spinning and unbalance of dizziness.
6. Absolutely terrible and as if my life isn't actually real; I feel like everything is fake and just a figment of my imagination.
7. I felt unreal, it's hard to explain. It was an overwhelming feeling of happiness, calmness, and relief.
8. It's a very weird feeling that feels almost unreal in a way. Like there is something else going on in reality that maybe we are unaware of.
9. It was a weird experience. It seemed out of place.
10. It made me feel a slight sense of fear. I also felt like I needed to figure out what this experience meant.
11. I felt alone and crazy
12. Every time I've experienced any of these I've felt scared for my own sanity. I am in no way a hypochondriac, in fact I strongly dislike labels and diagnoses, but the repetition of these events has made me contemplate seeking professional advice.
13. It freaked me out.
14. This experience made me feel distracted. Like I wasn't focused on reality.
15. It usually doesn't make me feel any type of way, I just get an unrecognizable feeling but it doesn't bother me, that feeling just helps me possibly figure things out and if not I move forward.
16. I was very confused, being only about 10 or 11 years old and never experiencing something like this before. I remember thinking I was the only person who had ever had this happen to them.

Appendix F: Manipulation Check (Studies 1 & 2)

Rules for Inclusion (i.e., retain?)

First, decide whether the participant followed the prompt. Use the following rules for inclusion to make your decision. If the participant's response doesn't break any of the rules below, then we will include it (0= exclude, 1 = include):

Self-World EI Threat Condition:

1. The passage must be interpretable.
2. The passage must describe an isolated, subjective event or a clearly defined category of event that the participant experiences regularly and describes in detail.
    a. Include responses in which the participant describes more than one event
        i. Indicate whether participant describes more than one event
3. The passage must involve a mismatch or opacity between mental states and world states (self-world EI)
    a. This can be determined explicitly
        i. "I felt the mind-world gap…"
        ii. "I felt dissociated…"
        iii. "I felt disconnected…"
    b. This can be determined implicitly (i.e., the passage falls into one of the self-world coding categories below)
4. Others can be present, but the passage cannot involve self-other EI

Self-Other EI Threat Condition

1. The passage must be interpretable.
2. The passage must describe an isolated, subjective event or a clearly defined category of event that the participant experiences regularly and describes in detail.
    a. Include responses in which the participant describes more than one event.
3. The passage must involve a mismatch or opacity between the participant's mental state and the mental state of another person(s).
    a. This can be determined explicitly:
        i. "I felt the mind-mind gap…"
        ii. "We didn't see eye to eye…"
        iii. "We weren't on the same page…"
    b. This can be determined implicitly (i.e., the passage falls into one of the self-other coding categories below.)
4. Focus of the paragraph is the ISO event (even if ESO is present)

Notes

Please take notes when thoughts and questions arise that seem important. For example, if you're having a lot of trouble deciding on a coding, try to explain this difficulty in your notes.

Appendix G: Study 1 Results With Duration Outliers Included

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Competence	Between Groups	4.857	3	1.619	.930	.426
	Within Groups	722.136	415	1.740		
	Total	726.993	418			
Relatedness	Between Groups	5.304	3	1.768	.881	.451
	Within Groups	832.686	415	2.006		
	Total	837.990	418			
EI_Affect	Between Groups	35.515	3	11.838	16.581	<.001
	Within Groups	296.299	415	.714		
	Total	331.814	418			

Contrast Tests

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)	95% Confidence Interval Lower	95% Confidence Interval Upper
Competence	Assumes equal variances	1	.4210	.25797	1.632	415	.103	-.0860	.9281
	Does not assume equal variances	1	.4210	.25696	1.639	406.245	.102	-.0841	.9262
Relatedness	Assumes equal variances	1	.3961	.27701	1.430	415	.153	-.1484	.9406
	Does not assume equal variances	1	.3961	.27666	1.432	411.231	.153	-.1477	.9400
EI_Affect	Assumes equal variances	1	.9198	.16524	5.566	415	<.001	.5949	1.2446
	Does not assume equal variances	1	.9198	.16695	5.509	364.549	<.001	.5915	1.2480

Multiple Comparisons

Bonferroni

Dependent Variable	(I) Condition	(J) Condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Competence	SW	SO	.02283	.18566	1.000	-.4694	.5150
		Dent	.25309	.18354	1.000	-.2335	.7397
		Routine	.19079	.18314	1.000	-.2947	.6763
	SO	SW	-.02283	.18566	1.000	-.5150	.4694
		Dent	.23025	.18168	1.000	-.2514	.7119
		Routine	.16796	.18127	1.000	-.3126	.6485
	Dent	SW	-.25309	.18354	1.000	-.7397	.2335
		SO	-.23025	.18168	1.000	-.7119	.2514
		Routine	-.06229	.17910	1.000	-.5371	.4125
	Routine	SW	-.19079	.18314	1.000	-.6763	.2947
		SO	-.16796	.18127	1.000	-.6485	.3126
		Dent	.06229	.17910	1.000	-.4125	.5371
Relatedness	SW	SO	-.09388	.19937	1.000	-.6224	.4346
		Dent	.20903	.19709	1.000	-.3135	.7315
		Routine	.09319	.19666	1.000	-.4281	.6145
	SO	SW	.09388	.19937	1.000	-.4346	.6224
		Dent	.30292	.19509	.727	-.2142	.8201
		Routine	.18708	.19465	1.000	-.3289	.7031
	Dent	SW	-.20903	.19709	1.000	-.7315	.3135
		SO	-.30292	.19509	.727	-.8201	.2142
		Routine	-.11584	.19232	1.000	-.6257	.3940
	Routine	SW	-.09319	.19666	1.000	-.6145	.4281
		SO	-.18708	.19465	1.000	-.7031	.3289
		Dent	.11584	.19232	1.000	-.3940	.6257
EI_Affect	SW	SO	.38729*	.11893	.007	.0720	.7026
		Dent	.48569*	.11757	<.001	.1740	.7974
		Routine	.82135*	.11731	<.001	.5104	1.1323
	SO	SW	-.38729*	.11893	.007	-.7026	-.0720
		Dent	.09840	.11637	1.000	-.2101	.4069
		Routine	.43406*	.11611	.001	.1263	.7419
	Dent	SW	-.48569*	.11757	<.001	-.7974	-.1740
		SO	-.09840	.11637	1.000	-.4069	.2101
		Routine	.33566*	.11472	.022	.0315	.6398
	Routine	SW	-.82135*	.11731	<.001	-1.1323	-.5104
		SO	-.43406*	.11611	.001	-.7419	-.1263
		Dent	-.33566*	.11472	.022	-.6398	-.0315

*. The mean difference is significant at the 0.05 level.

Appendix H: Study 1 Script

[Prefatory Instructions]

Before we begin, please move to a quiet area in which you can give your full attention to this study.

You will be asked to view a short video as part of your participation. **It is important that you are able to hear and clearly understand the video.** If you have headphones, you may want to connect them now.

Please continue once you are settled in a quiet area and ready to participate with your full attention.

[Study Introduction]

1= Self-Other EI 2= Self-World EI 3= Control

In this study, we are interested in learning more about a unique kind of psychological experience that people have when they are around other people (i.e., other people are present either in person or via phone, text, email, or video).

In this study, we are interested in learning more about a unique kind of psychological experience that people have when they are completely alone (i.e., no one else is present either in person or via phone, text, email, or video).

In this study we are interested in learning more about a unique kind of psychological experience that people have in their daily lives.

[Video Introduction]

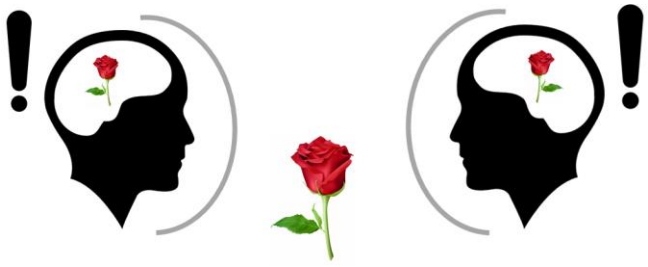
The following video will describe the type of experience in which we are interested. After watching the video, you will be asked to remember a time that you had one of these experiences.

Please continue when you are ready to watch the video.

[Video Scripts]

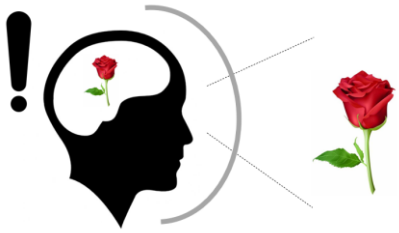
1. **Self-Other EI Threat**
   Experts say that it is impossible to experience the world in precisely the way other people perceive it, as if every mind inhabits its own dimension. They believe that any one mind is completely discreet from the minds of others.

For example, when you and another person look at a red rose, you see the rose differently than the other person. Moreover, you cannot "see" the rose as the other person sees it. As you can see, there is a "gap" between your mind and the mind of the other person.



In this study, we want to learn about moments in which we suddenly become aware of the gap between our minds and the minds of others. We refer to these moments as "mind-mind gap" experiences. Mind-mind gap experiences can be small and subtle, or large and obvious.

2. **Self-World EI Threat**
   Experts say that the mind and world exist separately, as if they belong to two different dimensions. They believe the mental world of thoughts and ideas is distinct from the world of physical objects.



For example, when you look at a red rose, you "see," in your mind, a mental representation of the rose, but not the rose itself. The rose itself is an object in the physical world, and your perception of the rose is an object in the mental world. As you can see, there is a "gap" between mental and physical realities.

In this study, we want to learn about moments in which we suddenly become aware of the gap between the mind and outside world. We refer to these moments as "mind-world gap" experiences. Mind-world gap experiences can be either small and subtle, or large and obvious.

3. **Control Condition**
   Experts define "routine activity" as a category of tasks that are regular components of daily living. They are the motions people go through that keep the day going.

For example, as you watch TV, fold laundry, or commute to school or work, you are completing a task that is normal for daily life.

In this study, we want to learn about moments in which people are completing routine activities. We refer to these moments as "daily life" experiences.

[Video Follow-up for threat conditions only]

Have you ever had a "mind-mind gap" experience when you were with others?

Have you ever had a "mind-world gap" experience when you were completely alone?

- Yes
- No

If no…

1. **Self-Other**
   Thanks for your response. You said that you have never had a mind-mind gap experience. Just to be sure, let's go over a few examples.
- A group of your friends thinks that something is funny, but you don't see the humor.
- You encounter a group of protesters who vigorously denounce something you believe in.
- You find the new blockbuster film terribly sad, but your good friend finds it uplifting instead.
- You think a passing cloud looks like an armadillo, but your friend sees a dolphin.

2. **Self-World**
   Thanks for your response. You said that you have never had a mind-world gap experience. Just to be sure, let's go over a few examples.
- While driving through a familiar area, you suddenly notice a restaurant that you're sure wasn't there before.
- You find a personal item in a strange location (e.g., keys in the fridge) and don't remember leaving it there.
- Re-watching a favorite movie from childhood, you realize that your memory of the movie does not match reality.
- You have the vivid sense that you've already lived the current moment, perhaps in a dream.

All participants: Do you think you've had an experience that is similar to the examples provided?

- Yes
- No

If yes… participant moves on to self-generated EI prompt corresponding to their assigned condition

If no… participant is shown a video vignette describing an EI experience corresponding to their assigned condition.

[Self-Generated Experiences]

Please describe your [MM gap, MW gap, daily life] experience.

Please describe your experience as vividly as possible. Describe the entire event or episode, including details like where you were, what time of day it was, what was happening around you, what happened leading up to this event, and so on. Take as much time as you need to describe the event. The more detail you provide the better.

[Essay text box]

----------{page break}----------

In a sentence or two, how did this experience make you feel?

[Short answer text box]

----------{page break}----------

[Self-Generated Experiences Reflection]

Thank you for your description. The following questions are going to ask you about the experience you've described. Please keep this experience in mind as you answer the following questions.

----------{page break}----------

Mind-World IOS: Please choose the pair of overlapping circles below that best describes the relationship between your mind and the world during the experience you wrote about:

Mind-Others IOS: Please choose the pair of overlapping circles below that best describes the relationship between your mind and the minds of others during the experience you wrote about:

(*order randomized*)

----------{page break}----------

Keeping in mind the "mind-world gap" [MM gap / daily life] experience event you wrote about, please rate how much you felt the following emotions:

EI Affect (order counterbalanced with BPN)

----------{page break}----------

Keeping in mind the experience you wrote about, please read each of the following items carefully and then indicate how true it is for you:

Adapted Basic Psychological Needs Scale (**BPN**)

----------{page break}----------

Thank you for your responses. We will now ask just a few more questions.

Quality of Response Check

Demographic Questionnaire

----------{page break}----------

Appendix I: Adapted Basic Psychological Needs Scale

Keeping in mind the experience you wrote about, please read each of the following items carefully and then indicate how true it is for you:

1. Right now, I feel ready to perform my best.

Not true at all Somewhat true Very True
1 2 3 4 5 6 7

2. Right now, I feel very competent.
3. Right now, I feel very effective. Right now, I feel like I am free to decide things for myself.
4. Right now, I do not feel pressured by external influences.
5. Right now, I feel free to express my ideas and opinions.
6. Right now, I feel like I can decide things for myself.
7. Right now, I feel connected to others.
8. Right now, I feel like I belong.
9. Right now, I feel ready to interact with others.

Appendix J: EI Affect Items

EI Affect (Young & Bosson, 2021)

Keeping in mind the event you wrote about, please rate the extent to which you experienced the following emotions:

- Interested*

  Very slightly or not at all *A little* *Moderately* *Quite a bit* *Extremely*

- Distressed*
- Excited*
- Strong*
- Enthusiastic*
- Proud*
- Inspired*
- Nervous*
- Afraid
- Disconnected
- Detached
- Isolated
- Lonely

**Distractor Items*

Appendix K: Bistable Silhouettes