

Exploring the Effect of Perceived Parental Responses to Interoceptive Experiences on The Relational Aspects of Self-Concept

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Abstract. As early as 1890, William James noted a distinction between the bodily self and the narrative self. Modern research largely agrees with this notion, finding that the bodily aspects of the sense of self precede the emergence of more sophisticated and abstract forms of self-concept. Interoception is the processing of one's internal bodily signals, and emerging evidence suggests that the development of interoception is essential for both the bodily and narrative selves. However, few studies have looked into whether interindividual differences in the development of interoception would have implications for the relational aspects of one's self-concept. Past research has highlighted the impact of perceived parenting styles on individuals' self-concepts. For example, positive parenting styles tend to lead to closeness to parents and thus greater inclusion of parents in the self-concept. Conversely, negative parenting styles can lead to problems in individuation-separation and dependency and fear of engulfment by parents. The present study will focus on a specific domain of parenting, that is, parental responses to children's interoceptive experiences (i.e., interoceptive mirroring). We hypothesize that negative mirroring may lead to either a higher degree of self-concept integration between self and parent (due to dependency) or, on the contrary, a lower degree of integration (due to fear of engulfment and/or the lack of closeness).

Keywords: Self-Concept; Interoceptive Mirroring; Parenting Styles.

1. Introduction

Interoception, the perception and processing of one's own internal bodily signals, is increasingly understood as a foundational element in a wide range of psychological functions, including self-awareness. Given that interoception provides a psychophysiological basis for the sense of the bodily self, which precedes the narrative self, it is widely accepted that the development of interoception is fundamental to an individual's self-concept. [1-2]

The development of interoception is significantly shaped by parent-child interactions. Consequently, parenting practices related to interoceptive experiences are likely to affect the relational aspect of self-concept. For instance, drawing from the concept of "allostasis dependency," researchers suggest that caregivers' neglect or misinterpretation of an infant's physiological needs may hinder the development of an independent interoceptive system, potentially leading to self-other blurring. Similarly, our recent theoretical work proposes that even during adolescence, parental responses to an adolescent's interoceptive experiences can significantly impact the development of interoception and self-concept. Positive parenting, such as being attentive to and validating a child's bodily sensations, can foster their confidence in these signals, leading to increased autonomy and a greater capacity for closeness with parents. Conversely, neglecting or denying a child's bodily sensations may result in feelings of dependency on and being "engulfed" by parents.

This study aims to test the correlation between perceived parental responses to their children's interoceptive experiences and the relational aspect of the children's self-concept. We administered three questionnaires: the Recollected Interoceptive Mirroring (RIM) scale to assess perceived parental responses, the "Inclusion of Other in the Self (IOS)" scale, and a 10-statement measure of self-concept. We hypothesize that negative parental mirroring may lead to either a higher degree of self-concept integration between the self and the parent (due to dependency) or, conversely, a lower degree of integration (due to a fear of engulfment and/or a lack of closeness).

2. Method

A total of 356 participants (mean age 25 years, SD=7.771) took part in the present study. Each participant completed three questionnaires online, as described below.

The Recollected Interoceptive Mirroring (RIM) was used to assess interoception-related parenting retrospectively. The RIM has two dimensions: the RIM_POS measures positive interoception-related parenting, with higher scores indicating higher frequency of perceived positive parenting behaviors, while the RIM_NEG measures negative interoception-related parenting, with higher scores indicating lower frequency of perceived negative parenting behaviors (i.e., reversely coded).

IOS_parents stands for results for the “including others in the self” multiple-choice questionnaire. The perceived level of self-concept integration between children and their fathers and mothers was scored separately, ranging from 0 (completely separate) to 7 (completely integrated). The score of IOS is analyzed as a whole by adding the level of integration between children and each side of the parent; thus, the maximum and minimum are 14 and 0, respectively. In our test, the mean is 8.379 with a SD of 3.435.

Self-recognition is measured via 10 self-statement tests, the results are labelled in the group of “ratio_”. 21 out of 356 participants provided invalid answers (missing=21). Answers are considered invalid when a participant provides more than 5 statements that is a question or repetitive or unrelated to self-recognition or cannot be classified into any type of the following personal identifications: idiocentric (ID) (about their individual selves), large group (LG) (being part of a large community, e.g. country), small group (SG) (being part of a small-scale community, e.g. family), and allocentric (AC) (involving self-descriptions related to social aspects). These self-descriptions were also coded according to whether they were positive (POS), negative (NEG), or neutral (NEU).

3. Result

Descriptive statistics of all measured variables are presented in Table 1.

Table 1. Descriptive statistics of all measured variables are presented

	N	Mean	Std. Deviation	Minimum	Maximum
age	356	25.003	7.771	17.000	70.000
RIM_sum	356	105.360	17.292	55.000	149.000
RIM_POS1	356	53.674	10.074	29.000	75.000
RIM_NEG1	356	51.685	11.295	15.000	74.000
IOS_parents	356	8.379	3.435	0.000	14.000
ratio_ID	335	0.695	0.221	0.000	1.000
ratio_LG	335	0.115	0.151	0.000	0.700
ratio_SG	335	0.046	0.112	0.000	1.000
ratio_AC	335	0.117	0.149	0.000	1.000
ratio_POS	335	0.448	0.306	0.000	1.000
ratio_NEG	335	0.093	0.168	0.000	0.900
ratio_NEU	335	0.459	0.282	0.000	1.000

The reliability of the RIM questionnaire, including the whole scale and two subscales, was good (RIM_POS, McDonald's $\omega=0.901$; RIM_NEG, McDonald's $\omega=0.898$; RIM_SUM, McDonald's $\omega=0.908$).

Table 2. provides evidence for confirmatory analysis of the hypothesis

Variable		RIM_sum	RIM_POS1	RIM_NEG1	IOS_parents	ratio_ID	ratio_LG	ratio_SG	ratio_AC	ratio_POS	ratio_NEG
RIM_sum	r	—									
	p	—									
RIM_POS1	r	0.783	—								
	p	<.001	—								
RIM_NEG1	r	0.832	0.307	—							
	p	<.001	<.001	—							
IOS_parents	r	0.450	0.374	0.355	—						
	p	<.001	<.001	<.001	—						
ratio_ID	r	-0.040	-0.08	-0.056	-0.034	—					
	p	0.465	0.877	0.307	0.534	—					
ratio_LG	r	-0.042	-0.045	-0.025	-5.580×10^{-4}	-0.597	—				
	p	0.445	0.409	0.645	0.992	<.001	—				
ratio_SG	r	0.010	-0.024	0.038	0.001	-0.527	0.115	—			
	p	0.851	0.662	0.484	0.984	<.001	0.004	—			
ratio_AC	r	0.091	0.076	0.076	0.048	-0.418	-0.283	-0.161	—		
	p	0.095	0.166	0.164	0.380	<.001	<.001	0.003	—		
ratio_POS	r	0.221	0.216	0.154	0.262	0.268	-0.222	-0.065	-0.107	—	
	p	<.001	<.001	0.005	<.001	<.001	<.001	0.237	0.051	—	
ratio_NEG	r	-0.206	-0.135	-0.205	-0.219	0.047	-0.184	-0.085	0.183	-0.412	—
	p	<.001	0.013	<.001	<.001	0.390	<.001	0.123	<.001	<.001	—

Table 2 provides evidence for confirmatory analysis of the hypothesis. To reiterate the hypothesis of this paper, we hypothesize that negative mirroring may lead to either a higher degree of self-concept integration between self and parent (due to dependency) or, on the contrary, a lower degree of integration (due to fear of engulfment and/or the lack of closeness).

Both positive and negative parental responses are statistically correlated with the level of self-concept integration between others and self (both $p < .001$) (note that RIM_NEG is reversely coded), suggesting that those who perceived more positive parental responses to interoception tended to have a greater extent of inclusion of parents in their self-concepts. As a result, these data prove that

different degrees and frequencies of negative responses from parents may lead to various levels of self-concept integration between the self and the parent in their children. The more negative mirroring, the more separation (low integration); the less negative mirroring, the more integration, supporting the research hypothesis.

Meanwhile, aside from the data that directly determines the validity of the research hypothesis, Table 2 also reveals how parents' responses influence children's self-recognition. The ratio of positive self-statements is positively correlated with positive parental responses and negatively correlated with negative parental responses. The opposite tendency is observed for negative self-statements. Surprisingly, statistics show that only the correlations between RIM_NEG1 & ratio_NEG and RIM_POS1 & ratio_POS are significant ($p < .001$), i.e., it is not due to random chance that less negative parental comments can lead to fewer negative self-statements and more positive comments can increase positive ideas of self. However, when looking at the correlation between parental responses and different kinds of self-statements (ID, LG, SG, and AC), there were no significant relationships.

Level of integration is also shown to be statistical-significantly related to positive and negative self-recognition (p -values $< .001$). Although the correlation is relatively weak, a higher level of self-concept integration is shown to link to more positive self-recognition (ratio_POS: $r = 0.262$) and less negative self-recognition (ratio_NEG: $r = -0.219$).

4. Discussion

The research has the following key findings: 1) more positive and less negative parental responses lead to a higher degree of self-concept integration between parents and children; 2) positive parental responses are positively correlated with positive self-recognition, while negative parental responses are negatively correlated with negative self-recognition; 3) level of self-concept integration positively correlates with positive self-recognition and negatively correlates with negative self-recognition.

According to past studies, our first finding aligns with [5], which states that positive parenting is likely to result in greater closeness between parent and child, thus leading to higher integration. Alternatively, our data could be well explained using the concept of the "engulfment anxiety" in the Separation-Individuation theory [6], such that intrusive parenting (as reflected by the negative parenting subscale of the RIM) is associated with a greater fear of self being engulfed by parents.

It should be noted that this is a correlational study, meaning that we cannot draw conclusions about the causal relationship between perceived parental responses and children's self-concept. In addition, whether the degree of inclusion of parents in the self reflects perceived closeness to parents or fear of engulfment requires further investigation.

Thus, the present study has just begun to study the effects of perceived parental responses on children's self-perception. A more positively perceived response from parents may lead to a higher degree of self-concept integration and therefore a tendency to see oneself more positively.

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