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Situational perception and affect: Barking up the wrong tree?☆

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ABSTRACT

The current study was conducted to raise awareness to the possibility that perceptions of situations and *in situ* affective states might be highly correlated. To investigate this potential overlap, two recent taxonomies of situational perception, the Situational Eight DIAMONDS and the Situation 5, were assessed in a sample of $n = 157$ along with a measure of positive and negative affect. Participants provided accounts and ratings for all constructs for three self-selected situations. Overall, 383 situations could be analyzed using multiple regression while considering the nested data structure. Both the DIAMONDS and the Situation 5 scores showed considerable overlap with positive and negative affect scores. The study further advances the growing nomological net of situational perception dimensions and other constructs. Limitations such as the selective-reporting-bias and implications for future situation research are discussed.

1. Introduction

The person-situation-debate, that is the question how internal person factors as opposed to situational forces influence human behavior in any given situation, has, more or less, come to an end (Fleeson and Noftle, 2009). A consensus has emerged that both internal, stable person factors (personality) as well as external situations can influence behavior (Mischel and Shoda, 1995; Rauthmann, 2012; Sherman, Nave, and Funder, 2010; Sherman, Rauthmann, Brown, Serfass, and Jones, 2015), and one subsequent consequence was that the situation has received a lot of research interest (Horstmann, Rauthmann, and Sherman, 2017). One of the main points of criticism that had to be initially addressed was that it was considered nearly impossible to measure situations (Hogan, 2009). Without a descriptive system and an accompanying measure for situations, the situation could not be considered as a predictor for human behavior. Recent research endeavors have fortunately produced such situation taxonomies and assessment tools that allow to measure interindividual differences in how situations are perceived (Brown, Neel, and Sherman, 2015; Gerpott, Balliet, and de Vries, 2017; Horstmann, Ziegler, and Ziegler, 2017; Parrigon, Woo, Tay, and Wang, 2017; Rauthmann et al., 2014).

Situation perception as a construct has since been successfully used to predict various outcomes, such as behavior, affect, well-being, or happiness (Parrigon et al., 2017; Sherman et al., 2015) cooperation (Gerpott et al., 2017) or goal related behaviors (Brown et al., 2015). Even though this looks very promising, there is cause for concern: Measures of situational perception, especially when used as *in situ* ratings of situations, have been shown to be related to affect (Parrigon et al., 2017; Sherman et al., 2015). The questions now are how strong this relation between affect and situation perception is and whether it occurs for different conceptualizations of situational perceptions. If affect was, in fact, strongly related to different situational perception measures, operationalizing different situational perception taxonomies, these two constructs might be indistinguishable in the worst case. Many of the effects attributed to situational perception reported so far could then actually be due to affect, and situation research would be barking up the wrong tree.

This paper therefore serves two purposes: First, we examine how situational perception and affect are conceptually related, and second, we show empirically the overlap between affect and situational perception for two different measures and taxonomies of situational perception.

1.1. Situational perception

According to Rauthmann and colleagues (Rauthmann, Sherman, and Funder, 2015), psychological situations can be organized on three different levels: situational Cues, situational Characteristics and situational Classes. Cues refer to the physically present elements in a situation; for example a table or a computer, but also time and space. Situational characteristics describe the psychological meaningful aspects of a situation on a broader level (Horstmann and Ziegler, 2016;

☆ We fully believe in the values of Open Science. Therefore, we publicly share a) all data related to this article, b) the full R code used to generate the results, and c) a codebook that contains all items originally used. All materials can be found in the Online Supplemental Materials (OSM) on the Open Science Framework: www.osf.io/4b9bw

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Horstmann, Ziegler, and Ziegler, 2017; Ziegler, Horstmann, and Ziegler, 2017). On the broadest level, situations can be clustered into classes or contexts, such as "work" or "home" (e.g. Geukes, Nestler, Hutteman, Küfner, and Back, 2016).

If a person perceives a situational cue, this cue has to be interpreted, and the result of this interpretation is the psychologically meaningful characteristic of a situation (the "Processing Principle", Rauthmann, Sherman, and Funder, 2015; see also Ziegler and Horstmann, 2015). For example, based on knowledge about animals, a large snake may be interpreted as dangerous or beautiful. Different persons will thus have different perceptions of such a situation: Generally, most people would agree that this could be a dangerous situation (shared variance), but each person will also have a unique perception of this situation (idiosyncratic variance). This idiosyncratic variance depends on the unique perspective of the person, and therefore could be correlated with affect.

1.2. Situational perception and affect

How are situational perception and affect related? If we imagine a perceiver entering two identical situations (with respect to their situational cues, with the exception of time), it is possible that this perceiver will interpret the situation differently. If this were to happen, it could only be due to changes within the person since the cues within both situations are identical. One construct very likely to change within a person over time is affect. This would mean that affect influences the perception of a situation, and, following the process model of situational perception, consequently behavior (Rauthmann, Sherman, and Funder, 2015). On the other hand, the perception of a situation could also influence affect. As described by Sander and colleagues, "emotional processes are elicited and dynamically patterned as the individual continuously and recursively appraises objects, behaviors, events, and situations"[1](Sander, Grandjean, & Scherer, 2005, p. 318). Thus, emotions or affect develop along with the person's perception of the situation as being relevant to well-being, behavior, goals, values, etc. For example, if a person perceives that a situation calls for a task to be done (e.g. learning for an exam), but simply is too tired, negative affect might result. Thus, not the fact that work needs to be done per se, but the interaction of this perception and the current general state of the person results in affect.

If situation perception and affect were related, it would have to be examined how large this overlap actually is. There are many studies reporting results that might be indicative of the relation between situational perceptions and affect (Edwards and Templeton, 2005). However, only a few studies specifically used measures of situational perception and affect. For example, Sherman et al. (2015) first examined the relation of situational perception and happiness and found that some dimensions of situational perception were substantially related to happiness. However, they did not explicitly investigate the relation of *all* situation measures with happiness. Yet, Parrigon and colleagues examined the overlap of situational perception and affect in a cross-sectional design (Parrigon et al., 2017). Using positive (PA) and negative (NA) affect as dependent variables and measures of three different situational taxonomies as predictors, those authors showed that measures of situational perception explained between 51 and 69% of variance in PA, and between 67 and 83% of variance in NA. Furthermore, bivariate correlations between their measure of situational perception (CAPTION), ranged between −.03 and .53 (median $r = .27$) for PA, and between .02 and .77 (median $r = .47$) for NA. In other words, with the exception of the dimension Typicality, all other dimensions of situational perception correlated with either PA or NA above .46 (significant at $p < .05$, with $N = 522$). Parrigon and colleagues interpreted these findings in favor of their measure, demonstrating its ability to predict affect. However, if these results were robust and replicable across other measures and taxonomies of situational perception, we would like to offer an alternative interpretation based on the theoretical reasoning stated above, namely a lack of discriminant validity of these measures.

1.3. Research question

Based on the previous findings and theoretical assumptions, positive and negative affect should be substantially correlated with measures of situational perception. In the present study, we will examine if these findings can be replicated using two different measures of situational perception representing two different taxonomies. This approach will also allow us to examine the convergent validity among these measures of situational perception and help to expand the nomological net of taxonomies of situational perception.

2. Methods

2.1. Sample

From initially 190 participants who started the study, 157 participants completed all relevant questionnaires. Of these, 84% (=132) were female. The mean age was $M_{age} = 23.96$ ($SD_{age} = 6.53$, $median_{age} = 22$). Most of the participants were undergraduate students in psychology, participating for course credit. The sample size was not determined a-priori, since the data reported here constitute the first part of a multi-wave assessment in preparation for a behavioral experiment. Data collection was stopped when the research program for the behavioral experiment was stopped due to resource-constraints.

2.2. Measures and procedure

Participants first had to answer a standard set of questions regarding their age, gender, educational status, job success and job satisfaction. They subsequently had to take two standardized trait measures, the German version of the Big Five Inventory (Lang, Lüdtke, and Asendorpf, 2001) as well as the German version of the Positive and Negative Affect Schedule (PANAS; Krohne, Egloff, Kohlmann, and Tausch, 1996; Watson, Clark, and Tellegen, 1988). From these measures, only age, gender, and PANAS trait are reported in this study.

Subsequently, participants were required to report three situations from the previous day which were chosen based on time of day: 9 a.m., 2 p.m., and 7 p.m. Participants then had to briefly describe the situation (verbally), list present persons, describe their own behavior, what they were doing, what time it actually was (in case participants were sleeping, they could then select another situation), and how long the situation lasted. This procedure is commonplace in the construction and development of situation taxonomies (Brown et al., 2015; Gerpott et al., 2017; Parrigon et al., 2017; Rauthmann et al., 2014; Ziegler et al., 2017). Afterwards, they completed the following measures for each of the situations they reported.

2.2.1. Situational Eight DIAMONDS

The Situational Eight DIAMONDS were developed by Rauthmann and colleagues (Rauthmann et al., 2014) to describe situational characteristics. They consist of a set of statements that can describe a situation, such as "The situation is playful" (see Table 1 for sample items, which are similar to those provided by Rauthmann and Sherman, 2016). The participant then has to rate how much s/he agrees to this statement on a 6-point Likert-type scale. The dimensions assessed are Duty (the extent to which work has to be done), Intellect (the extent to which the situation requires deep thinking, or analysis), Adversity (to which extent the situation is eliciting stress or is dangerous), Mating (to which extent potential sexual partners are present), pOsitivity (to which extent the situation is positive), Negativity (to which extent the situation is negative), Deception (to which extent someone can be deceived),

[1] We are very thankful to an anonymous reviewer for pointing this out.