Individual differences in hedonic experience: Further evidence for the construct validity of the ACIPS

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A R T I C L E   I N F O

A B S T R A C T

We conducted three investigations to examine the convergent and discriminant validity of the Antici-patory and Consummatory Interpersonal Pleasure Scale (ACIPS; Gooding and Pflum, Psychiatry Research, 2014). In Study One, we used Mechanical Turk to individually administer the ACIPS to a diverse group of community adults aged 25–69. Reports of greater social/interpersonal pleasure was associated with greater sense of interpersonal connectedness with others, higher need to belong, and less likelihood of reporting anxiety during social interactions. In Studies Two and Three, participants were tested in group settings. Studies with undergraduate participants indicated that ACIPS scores are associated with mea-sures of prosocial interactions and sociability as well as measures of anhedonia. Despite differences in testing conditions (i.e., online vs. paper administration) and heterogeneity in the samples in terms of educational level, geographical location, and age, the ACIPS demonstrated good convergent and dis-criminant validity. Taken together, these studies add to the increasing body of evidence for the construct validity of the ACIPS.

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1. Introduction

Beginning at birth, human beings are inclined to be social an-imals. Typically developing individuals invest considerable time planning, engaging in, and mentally reliving social interactions (Kwapil et al., 2014). However, individuals differ in the strength of their hedonic capacity for social interaction, i.e. their ability to enjoy social relationships. Some individuals experience consider-able pleasure with a great deal of social interaction, whereas others do not seem to need or enjoy a large quantity of inter-personal relationships.

Behavioral, neuroimaging, and self-report studies suggest that social interactions are inherently rewarding for most typically developing individuals. Kahneman et al. (2004) had more than 900 female respondents record their feelings during daily ex-periences. Respondents experienced the most enjoyment from engaging in activities with friends, family, and significant others and the least enjoyment when alone. Several investigations (Bora et al., 2009; Guroglu et al., 2008; Walter et al., 2005) indicate that

social stimuli (e.g., pictures of one's own child, friends, or a loved one), social cooperation during simple tasks, and social interaction simulations affect activation of different areas in the brain's re-ward system, such as the ventral striatum and ventro-medial prefrontal cortex. Using fMRI, Fareri et al. (2012) found that par-ticipants produced greater blood-oxygen level dependent (BOLD) responses when they shared favorable monetary outcomes with a close friend, as opposed to a study confederate or a computer, indicating the modulating effects of social context on reward processing.

Hedonic capacity, the ability to experience pleasure (and con-versely, the reduced ability to experience pleasure), is normally distributed throughout the population (Fonseca-Pedrero et al., 2014). Thus, in dimensional models of hedonic capacity, anhedonia would be present in the general population at low base rates. So despite the generally rewarding nature of social interactions, i.e., there is a normally hedonic group that belongs to a larger group, there are some individuals who do not experience pleasure in social interactions, and thus would comprise, a second, smaller group. In this way, social anhedonia might be best considered on a continuum, rather than categorically (Fonseca-Pedrero et al., 2014; Kaiser et al., 2011).

Investigators frequently study the construct of social anhedo-nia, the diminished capacity for pleasure in the social and inter-personal domain, in relation to psychological disorders. Research

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indicates that individuals with major depressive disorder frequently experience state-related social anhedonia, while many individuals with schizophrenia and schizophrenia-spectrum disorders such as schizoid personality disorder and schizotypal personality disorder experience traitlike social anhedonia (Blanchard et al., 2001). Anhedonia is also observed during stimulant withdrawal (Gawin and Kleber, 1986).

We (Gooding and Pflum, 2011a, 2014b) developed the 17-item Anticipatory and Consummatory Interpersonal Pleasure Scale (ACIPS) as an indirect measure of social anhedonia. That is, the ACIPS was designed to specifically measure individual differences in hedonic capacity for social and interpersonal pleasure. We defined our target construct as a continuum, ranging from high/ normal capacity to enjoy interpersonal relationships and social contact to pathologically low capacity, defined by indifference to intimacy and need for connectedness with others as well as an aversion for social inclusion or social interaction.

To date, we have determined that the ACIPS shows high internal consistency across samples (α's range from 0.86 to 0.91) and good temporal stability over a period of 5–8 weeks (Gooding and Pflum, 2014a,b). Individuals who report higher levels of social and interpersonal pleasure also report higher levels of anticipatory and consummatory pleasure in general and reward responsiveness. Individuals with higher ACIPS scores also tend to report lower levels of social anhedonia and physical anhedonia. We wanted to continue investigating how the construct of social and interpersonal pleasure was associated with other measures related to affiliation, in order to further elucidate how such individual differences relate meaningfully to risk for various forms of psychopathology that are associated with deficits in, and/or impairments in social relationships.

1.1. Overview

There were two primary goals for this series of investigations. First, we wanted to examine how individual differences in the ability to experience pleasure from social and interpersonal interactions are related to affiliative tendencies, loneliness, and social interaction anxiety (Study 1) and different aspects of social reward (Study 3). Second, we wanted to replicate a subset of findings from our prior work with different samples to ensure that the pattern of relationships was not sample-dependent. Specifically, we wished to examine the relationship between social and interpersonal pleasure, as measured by the ACIPS, and other aspects of pleasure, as measured by the Temporal Experience of Pleasure Scale (TEPS; Gard et al., 2006), in a community-derived sample (Study 1) as well as a sample with a larger representation of ethnic minorities (Study 1 and Study 2). We also wanted to replicate the relationships between our measure of anhedonia (i.e., the ACIPS), and another measure of the construct, the revised Social Anhedonia Scale (Eckblad et al., 1982) (Study 2). While our prior work indicated an association between hedonic capacity and schizotypy (Gooding et al., 2014), we wanted to further explore this relationship, using other measures of schizotypy (Study 2). In these ways, this research was undertaken to specify the nature of the relationships between social and interpersonal pleasure and other affiliative variables. Overall, the studies varied in terms of the measures that we administered in addition to the Anticipatory and Consummatory Interpersonal Pleasure Scale (ACIPS), a validated measure of individual differences in hedonic capacity for social and interpersonal interactions.

2. Study One

Although humans are social by nature, we believe that the experience of social and interpersonal pleasure is a rather complex affective experience. An individual's reported enjoyment of social interactions may reflect aspects of perceived social evaluation by others, level of social cognition, anxiety regarding interaction, desire to be accepted, history of past social interactions, as well as expectations and goals for future social interaction. We examined how individual differences in the ability to experience pleasure from social and interpersonal interactions related to affiliative tendencies, loneliness, and social interaction anxiety in an unselected sample of community volunteers.

2.1. Methods

2.1.1. Participants

Initially, 350 individuals were administered the questionnaires via Amazon's Mechanical Turk (MTurk) or social media. Sixty percent of the community sample was recruited with a "Human Intelligence Task" (HIT) posted on MTurk program. The remaining adults were obtained via social media postings on Facebook and Reddit, and/or word-of-mouth. Although all participants were community members, we made a concerted effort to recruit members of ethnic minority groups through announcements via Facebook and word-of-mouth. All individuals received remuneration for their participation.

Some participants ($n=17$) were excluded because they either withdrew prematurely, showed random response patterns, or skipped too many questions. Three "catch" questions were included in order to detect individuals who were randomly responding to the questionnaires; 5 were detected with the first catch question, 5 with the second, and 16 with the third question. Two other participants were excluded due to their refusal to disclose their gender. This resulted in a final sample of 305 (87.1%) participants.

2.1.2. Procedure and measures

The online questionnaire was hosted by Qualtrics.com, a web-based survey and research software. Participants were given a link that, once clicked, brought them to an online consent form. After completion of the consent form, participants were provided with a series of questionnaires compiled into an online survey. The online survey took approximately 60 min to complete. The entire study was approved by University of Wisconsin-Madison Educational and Social Sciences Human Subjects Board.

There were nine surveys administered in Study One, namely: the Anticpatory and Consummatory Interpersonal Pleasure Scale (ACIPS); Temporal Experience of Pleasure Scale (TEPS); Social Connectedness Scale; Need to Belong Scale; Marlowe-Crowne Social Desirability Scale; Curiosity and Exploration Inventory (CEI-II); UCLA Loneliness Scale (ULS V.3); Berkeley Expressivity Questionnaire (BEQ); and the Social Interaction Anxiety Scale (SIAS).

2.1.2.1. Anticipatory and Consummatory Interpersonal Pleasure Scale (ACIPS). The 17-item Anticipatory and Consummatory Interpersonal Pleasure Scale (ACIPS; Gooding and Pflum, 2014b) was specifically designed to measure individuals' ability to look forward to interactions with other people (anticipatory social pleasure) as well as their ability to experience pleasure about social/ interpersonal interactions when they occurred (consummatory social pleasure). Prior factor analyses (Gooding and Pflum, 2014a) identified four factors underlying the ACIPS: a general interpersonal factor, pleasure derived from bonding in the context of close relationships, pleasure associated with bonding within the context of shared interests and experiences and pleasure associated with family-related interactions. The ACIPS is scored on a Likert scale, from 1 (very false for me) to 6 (very true for me), and total scores are calculated by summing the ratings (after reversing one negatively-worded item). Higher total scores reflect greater