



# Anticipatory and Consummatory Pleasure in Schizophrenia: A Scale Development Study

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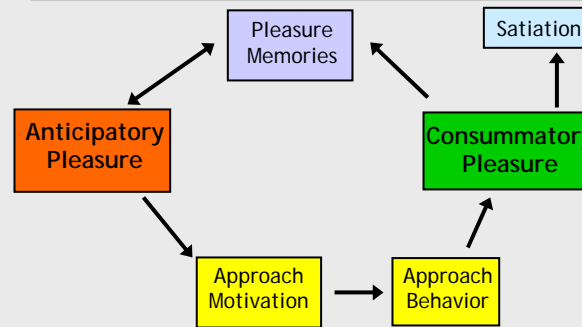
## Overview:

- The symptom of anhedonia is common in schizophrenia (e.g. Fenton & McGlashan, 1991).
- However, laboratory studies have not consistently found evidence of hedonic deficit (e.g. Berenbaum & Oltmanns, 1992; Kring & Neale, 1996).
- Based on neurobehavioral models of hedonic experience (e.g. Berridge & Robinson, 1998) we examined the distinction between deficits of anticipatory pleasure (pleasure in anticipation) and consummatory pleasure (in-the-moment pleasure) in schizophrenia.

## Method:

- We developed a model of the time course of the experience of pleasure (Figure 1).
- Using theory and statistical methods we developed an anticipatory pleasure scale (14 items) and a consummatory pleasure scale (10 items).
- Factor analyses were done with a large college sample (N=1039). Convergent and discriminant measures were used with several additional samples to test validity (Figure 2).
- Both scales were given to schizophrenia patients and nonpatient controls (Figure 3). A semi-structured interview was also given to patients and correlated with the scales (Figure 4).

Figure 1. Theoretical Model of the Time Course of the Experience of Pleasure



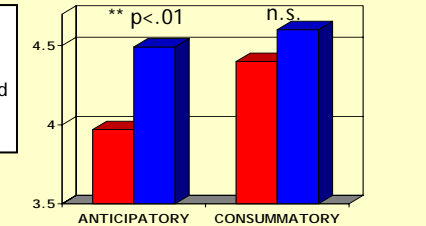
Anticipatory	Sample Items	Consummatory
<ul style="list-style-type: none"> <li>Looking forward to a pleasurable experience is in itself pleasurable.</li> <li>When I think of something tasty, like a chocolate chip cookie, I have to have one.</li> </ul>		<ul style="list-style-type: none"> <li>I relish the first bite of a slice of pizza.</li> <li>I enjoy taking a deep breath of fresh air when I walk outside.</li> </ul>

Figure 2. Convergent & Discriminant Data

Scale	N	Convergent		Scale	N	Discriminant	
		Anticipatory	Consummatory			Anticipatory	Consummatory
Physical Anhedonia Scale	231	-0.49	-0.56	Imagery Ability (QM)**	144	0.24	0.03
Fawcett-Clark Pleasure	231	0.40	0.48	Beck Depression (BD)**	990	-0.18	-0.08
BAS - Fun Seeking	230	0.29	0.21	Avoidance (BIS)*	224	0.25	0.11
Positive emotion	205	0.32	0.32	BAS - Drive*	225	0.17	0.06
Extraversion (BFI)	205	0.32	0.26	BAS - Reward Resp.**	230	0.40	0.18
Agreeableness (BFI)	205	0.11	0.16	BAS - Total**	223	0.40	0.20
Conscientiousness (BFI)	205	0.10	0.05	Openness (BFI)**	205	0.14	0.31
Neuroticism (BFI)	205	0.09	-0.07	Excitement-seeking**	205	0.21	0.10
Positive Affect (PANAS)	143	0.13	0.13	Impulsivity**	205	0.18	0.06
Negative Affect (PANAS)	143	0.10	-0.01				
Social Desirability (MC)	231	-0.05	0.05				

\* p < .05, \*\* p < .01 = Significant difference in the two correlations (r to Fisher z).

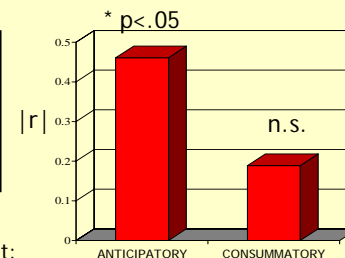
Figure 3. Schizophrenia and nonpatient means on anticipatory and consummatory scales



## Results & Discussion:

- Both scales were internally consistent and had good test-retest reliability: anticipatory scale ( $\alpha = .80$ ;  $r = .84$ ) consummatory scale ( $\alpha = .72$ ;  $r = .80$ ). Correlation of the 2 scales was .52.
- Correlations with discriminant measures suggest the scales tap distinct aspects of pleasurable experience.
- Schizophrenia patients reported significantly *less* anticipatory pleasure than controls but no difference in consummatory pleasure (Figure 3).
- Anhedonia ratings in a interview with patients were significantly correlated with anticipatory but not consummatory pleasure (Figure 4).
- These findings are consistent with the hypothesis that schizophrenia patients have an *anticipatory* but not a consummatory pleasure deficit.

Figure 4. Correlations with researcher rated semi-structured interview of anhedonia (SANS) in schizophrenia



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