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Affect Perception in Computer Mediated Communication

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Introduction

The perception of affect influences the subjective perception of an individual's environment (Isbell & Burns, n.d.). Accurate affect perception leads to increased resilience and positive coping mechanisms when faced with daily life stressors (Robinson, 2012). Communication technologies have revolutionized the ways in which individuals connect to one another professionally and socially (Walther, 1996). This study investigated accurate affect perception in computer mediated communication (CMC) from a multidisciplinary perspective.

Communication research posit several theories to accommodate the ways in which we communicate using CMC (J. B. Walther, 1996). Personality research has documented the correlation between the traits extraversion and neuroticism with positive and negative affect (Larsen, n.d.). Neuroscience research posits the benefits of having positive affect (over negative affect) and what language primers cognitively bias an individual towards an emotion (Van Berkum, 2013).

The purpose of the this study was to investigate accurate affect perception in the CMC environment and under which conditions affect perception increases.

Methods

- 154 participants ($M_{age} = 26.84$, $SD_{age} = 9.66$) responded to a self-report questionnaire hosted by Qualtrics.com.
- A multiple linear regression was conducted regressing accurate affect perception in the CMC environment against demographics, Big-5 personality scores, ACCS scores (IPC, EME and RAI), and PANAS scores (PA and NA).

Measures

- **CMC Competence and Use.** Demographics included age, education level, and daily use. According to research, age, education level, and daily use are the three most significant variables in determining an individual's ability to use and manipulate CMC (J. B. Walther, 1996).
- **Personality measure.** The Mini IP-IP is a 20 item self-report brief personality measure that measures the Big-5 personality domains (Openness/Intellect, Conscientiousness, Extraversion, Agreeableness, and Neurotic) (Donnellan, 2006). The items are phrases (Ex: "Am the life of the party", "Make a mess of things") which the participant is asked to indicate how well each phrase describes them.
- **Mood measure.** The PANAS is a 20 item self-report measure of mood (Watson, Clark, & Tellegen, 1988). The scale has two halves: ten questions to measure the participant's level of positive affect (PA) and ten question to measure the participant's negative affect (NA).
- **Attitude Toward CMC.** The Affect for Communication Channels Scale (ACCS) is a self-report 21 item measure (Kelly & Keaten, 2007). The ACCS measures positive and negative feelings associated with communicating via CMC and face to face. The 21 items are broken into three groups on a five point Likert scale with seven statements (I enjoy e-mail because I have more time to organize my ideas; I like face to face because you can see the other person's reactions; when I use e-mail I say things that I wouldn't say face to face; etc.) per group. The first measure is for increased preparation and control (with CMC) (IPC). The second measure is for enhanced meaning and emotion (with face to face) (EME). The third measure is for reduced anxiety and inhibition (with CMC) (RAI). For the purposes of this study, EME was reversed scored so that all of the scores would be one way (positive direction) toward CMC.
- **Affect Perception.** Nine common neutral words or statements (whatever, we'll see, hmm..., let me think about it, I don't think so, I'm busy, sure, let's talk, fine) that participants rated on a Likert scale from one to five. One being bad/negative, three being a neutral point, and five being good/positive. The scores from each of the nine items were summed together to make the affect accuracy score with 27 being a completely neutral score. The affect perception in CMC environment score was used as the dependent variable in the study.

Discussion

- Together, the predictor variables accounted for a moderate proportion of the variance in accurate affect perception in the CMC environment, $R^2 = .2$, $F(13,140) = 2.60$, $p = .003$.
- Multiple regression revealed that the significant predictor variables of accurate affect perception in the CMC environment are level of positive mood ($p = .008$) and the age of the individual ($p = .05$).
- The results indicate that as an individual's positive mood increases and age increases, so does their ability to accurately perceive affect in a CMC message.
- The present research's finding that positive mood is a significant predictor of accurate affect perception in the CMC environment support and expand Forgas AIM model, Russell's Circumplex Model of Affect, and supports Van Berkum's cognitive-linguistic research.
- **Cognitive appraisal of affect experiences allow an individual to manipulate CMC to their advantage though gaining insight into their emotional state.**

Figure 1. Positive Mood Level Line Fit Plot

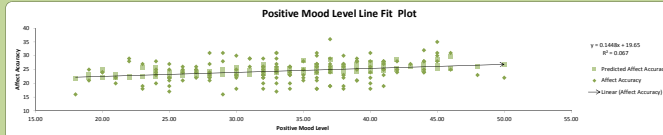


Figure 2. Participant Age Line Fit Plot

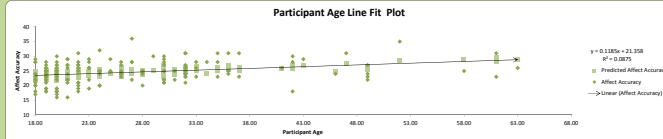


Table 1. Means and Standard Deviations for and Correlations Among the Affect in CMC Environment Variables

	M	SD	Correlations														
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	
1. Affect Accuracy	24.54	3.87	1.														
2. Age	26.84	9.66	.30**	1.													
3. Education Level	2.74	1.05	.27**	.46**	1.												
4. Daily Use	3.46	1.32	-.02	-.12	-.04	1.											
5. PANAS PA	33.77	6.92	.26**	.15	.16*	.15	1.										
6. PANAS NA	20	6.55	-.12	-.20*	-.07	-.04	-.06	1.									
7. Extraversion	11.39	1.51	.13	.05	.06	-.01	.11	.04	1.								
8. Agreeableness	12.34	1.51	.03	.02	.02	.03	.03	-.06	.07	1.							
9. Conscientiousness	12.07	1.73	-.04	-.09	-.06	-.16	.01	.09	.02	.19**	1.						
10. Neuroticism	11.74	1.62	-.04	-.05	.01	-.21*	.04	.14	.08	.04	.28**	1.					
11. Intellect	9.94	1.79	-.07	.03	.04	-.10	-.18*	.15	-.02	.04	.36**	.35**	1.				
12. ACCS IPC	36.81	8.65	.11	-.01	.09	.03	-.07	.14	.10	.09	.21*	.16**	.16	1.			
13. ACCS RAI	23.38	8.44	-.03	-.02	.08	.12	-.03	.22**	.23**	.03	.19*	.26**	.32**	.35**	1.		
14. ACCS EME	39.88	6.26	-.02	-.03	-.02	-.2*	.20*	-.02	.09	-.02	-.01	.03	-.23**	-.14	-.23**	1.	

Note: N = 154. Correlation (two-tail) is significant at the * $p < .05$; ** $p < .01$

Limitations

- This study is not generalizable. A majority of the sample are college students or individuals involved in academia as a profession.
- Our study was limited by one sample of affect per participant. Individuals feel a range of moods throughout their day. To gain insight into how well an individual reads affect and the relationship mood has on said relationship, asking participants to complete a survey sequence over a period of time would give researchers a range and average score per participant. This techniques would be a more accurate in interpreting an individual's true affect perception capabilities.

Future Work

- Controlled experiment using mindfulness meditation as a way of training cognitive appraisal of affective experience. Mindfulness meditation is a quantifiable method for cognitive training & forming new connections between neurons (Hanson & Mendius, 2009)

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