Normative Communication Processes and Associated Emotion in Mobile Health Groups

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Abstract

This project uses content analysis to investigate normative communication processes and associated emotion in two case studies. Individuals were formed into groups and used a mobile health application, VERA, to perform 'health behaviors' (such as indicating what they were eating or their exercise behaviors) for other group members via mobile posts. Initial results indicate that these performances tended to be more normatively descriptive than judgmental. In addition, in both cases comparisons between judgmental and descriptive performances showed more negative emotion with judgmental performances. Further analysis will involve determining normative performance patterns over time in the groups, as well as whether the performer's self report of emotion was similar to or different from the performed normative emotion. These findings will better our understanding of how norms are developed and used in group contexts, which could lead to more effective normative health interventions.

Keywords
Social norms, emotion, mobile health

ACM Classification Keywords
J.4 Social and Behavioral Sciences; Sociology.

General Terms

Performance

Introduction and Related Work

Social norms are perceptions of what is normal that influence our actions. Norms can influence group functioning and conversely, group structure can create norms [6, 9, 13]. Norms are not necessarily static or uncontested but rather emergent and negotiated [6, 13]. They are created by evaluating "...behaviors...communications and ...the self" [1]. Norms are inherently social constructs – because of this social element, norms comprise both content (in the form of information) and social pressure (in the form of compliance) [6, 14]. They are important because they guide our behavior – sometimes without our knowledge [7, 12]. Norms can be differentiated by type (descriptive and injunctive) and by social level (collective and perceived) [3, 15]. Descriptive norms are beliefs about others' prevalent behaviors [3].

Injunctive norms on the other hand, are beliefs about others' judgments [3].

In addition to scale and type, it should also be noted that norms and emotions seem to relate. For example, positive emotions tend to arise as a result of increased conformity to norms [2]. In addition, norm violation has been hypothesized to cause strong negative emotion, such as shame [16]. Finally, turning from the emotional states that norms elicit, norms themselves guide emotional expression [11].

Research Gaps

Although there is a long tradition of studying normative *effects*, comprehension of the *process* of normative communication is lacking [5, 9]. (A few notable exceptions exist, for example see Lenhart 2005 – Unstable Texts). A better understanding of how norms are communicated could allow for more effective use of normative health interventions. In addition, while norms and emotion seem related questions remain, such as: 1) Are different normative types and categories associated with positive or negative emotion?; and 2) Does emotion in normative performances match performer emotion?

Research Context

Because research has shown the importance of studying norms in their contexts, a case study format was chosen to address these research gaps [10]. Two case studies were run using VERA, a mobile health application (figure 1). VERA allows users to share posts about their health behaviors with group members. Posts comprised a photo, text, and an indication of whether the participant undertook the action.
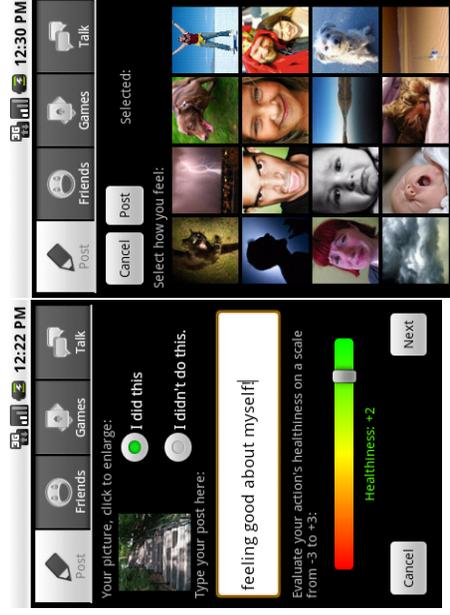
Figures 1 and 2:
VERA is on the left; PAM is on the right.

Participants were also asked to indicate their emotion at the time of the post using PAM (Photographic Affect Meter) (figure 2). The PAM postings could not be seen by group members. The first case study in 2010 comprised staff and students at a Northeastern university recruited via departmental and class lists, N=15. It ran for two weeks. The second case study in 2011 comprised staff and students at the same university recruited via its Wellness program lists, N=24. It ran for one month.

Normative Content Analysis

A normative content analysis of VERA posts was developed. This approach is novel because to these authors' knowledge, no normative content analysis has occurred before [Rimal, private conversation]. Deductive qualitative analysis was used because of its history in describing processes [4]. This method uses theory to guide category development, which is then reported on descriptively [8]. Coding included whether each normative performance (i.e.: each post) was descriptive or injunctive; categories for both injunctive and descriptive norms; categories for visual content; and positive and negative performed emotion. These were incorporated into a codebook used to train two undergraduate student coders.

Results

Initial results indicate that the most common type of norm performance was normatively descriptive in nature. Of the descriptive categories, nutrition comprised the most performances, followed by exercise. The injunctive category rankings seemed to shift with the group. The 2010 group was most likely to post 'regret' performances, while the 2011 group was more likely to post 'excuse' performances.

Year	Injunctive	Descriptive
2010	50%	39%
2011	58%	21%

Table 1: Performed overall negative emotion by norm type and year.

This may be related to the groups' differing foci on school and wellness.

Turning to emotion and excluding performances with no affect, overall the most prevalent descriptive norm performances tended to be associated with positive emotion while the most prevalent injunctive norm performances were mixed between positive and negative in 2011 and negative in 2010. In both groups the injunctive category of 'regret' was associated with the most negative emotion. Of the most prevalent descriptive performances negative emotion was associated with nutrition. This might indicate that descriptive norms and emotion point to group priorities. Lastly in both cases comparisons between injunctive and descriptive performances showed more negative emotion with injunctive performances (Table 1).

Conclusions and Future Work

Overall, this exploratory work outlines research directions in on-line group studies. Further analysis of this data will ascertain temporal normative patterns, as well as associated emotion. In addition, the data will be analyzed to determine emotional correlation between performance and performer. These might yield important patterns that could better our understanding of how norms are developed and used by individuals in group contexts, allowing for more targeted and effective normative behavioral interventions.

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