Examining Emotion Concepts Through a Property Generation Paradigm
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Introduction
Relatively little is known about the underlying structure of emotion concepts, a critical subset of our lexicon that allows us to communicate about our internal states. Work investigating their conceptual representation tends to focus on their abstract nature. Here we look at differences between emotions and other abstract concepts.

In the present study, participants performed a property generation task in which they listed features of emotion concepts and a matching number of concrete as well as abstract, non-emotion concepts. Based on prior work and theory, we predicted that emotion concepts would be distinguished by their levels of arousal and introspective weighting as well as their social associations, resulting in production of more introspective, communication, and social features as compared to all other concepts. By contrast, concrete concepts were expected to produce the most taxonomic, and entity properties, with abstract, non-emotion concepts falling between the distributions of features of emotion and concrete concepts.

Methods
Stimuli
- 119 concrete concepts randomly selected from a stimuli set compiled by Recchia & Jones (2012) based on prior property generation studies using concrete noun stimuli

All items were matched for frequency. Emotion and abstract concepts differed significantly from concrete concepts on concreteness (t(325.13) = -82.78, p < .001), and there were also group differences along the dimensions of valence and arousal.

Procedure
Participants (N = 41) took part in an online game in which they were instructed to provide properties, or features, in the form of ‘clues’ to a fictitious future partner who would need to guess the word they were defining. Participants were instructed to provide a minimum of 5 properties of each concept, and each participant completed a subset of 60 of the 357 concepts, 20 from each condition.

Results

A coding scheme derived from a combination of taxonomies used in prior property generation studies (McRae et al., 2005; Recchia & Jones, 2012; Wu & Barsalou, 2009) yielded a possible 29 property classifications, falling under 6 broad categories. The categories listed below include example properties generated by participants during preliminary data collection:

Conclusions and Future Directions
Models of abstract semantics variously ground abstract conceptual representations in linguistic information, aspects of meaning related to social or communicative function, affect, and introspective relevance. Here, we show that emotions, an important and distinctive subset of abstract concepts, are particularly rich in introspective features and are additionally distinguished from other abstract concepts along other dimensions. In particular, perceptual features, as indexed by entity properties, and context not involving introspection, as indexed by situational properties, appear to be more relevant for non-emotion abstract concepts.

In addition to the property generation task, participants completed measures of positive and negative affect (PANAS), interoceptive sensitivity (MAIA-2), and empathy (IRI). Analyses of individual differences in affective state, interoceptive sensitivity, and empathy as related to the distribution of properties generated could shed light on how individual experiences of emotion relate to conceptual representation.

The results of this study will make an important contribution to theories of how conceptual knowledge is organized in addition to shaping hypotheses for future empirical work in the domain of emotion concepts.

References

Results Cont.
A chi-square test of independence indicated a significant relationship between concept condition and distribution of property categories (X²(10, N = 41) = 2787.5, p < .001).

<table>
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<tr>
<th>Condition</th>
<th>Communication</th>
<th>Entity</th>
<th>Introspective</th>
<th>Social</th>
<th>Taxonomic</th>
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<td>0.41</td>
<td>0.04</td>
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</table>

Table 2. Proportions of property categories by stimulus condition

As seen in Figure 1 and Table 2, introspective features accounted for 73% of the 2,089 features produced for emotion concepts, 49% of the 1,193 features produced for abstract, non-emotion concepts, and only 4% of the 2,597 features produced for concrete concepts. No features produced for emotion concepts were predicted from concrete or abstract, non-emotion categories. Situation properties accounted for roughly the same proportion of features generated for both concrete and abstract, non-emotion concepts (33% and 32%, respectively), but only half that (10%) for emotion concepts. The highest proportion of features produced for concrete concepts were categorized as entity properties, which accounted for 43% of the total features.

Figure 1. Histograms reflecting counts of each property category for each stimulus condition for a subset of 5,879 features