

Brief article

AIN'T LOVE GRAND! A PROTOTYPE ANALYSIS OF THE CONCEPT OF ROMANTIC LOVE

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ABSTRACT

We conducted a prototype analysis to explore men's and women's cognitions (knowledge and beliefs) about the nature of romantic love. In study 1 (compilation of prototypic features), participants listed the features of romantic love in a free response format. The most commonly generated characteristics were trust, sexual attraction/desire and acceptance/tolerance. In study 2 (centrality ratings), participants provided centrality ratings for the study 1 features. As before, central features included trust, honesty and sexual attraction/desire; peripheral features included submission/obedience, deception/lies and depression. In study 3 (memory tasks), participants read statements that used an equal mix of central and peripheral features to describe a relationship between two individuals, engaged in an interference task, and were asked to recognize and recall the original statements. As expected, participants falsely recognized and incorrectly recalled a greater number of central than peripheral features. Correlational analyses revealed that the number of times a feature was incorrectly recognized was positively associated with both its frequency and its centrality. These results support the hypothesis that the concept of romantic love is prototypically organized (i.e. has an internal structure), and that sexual desire is one of the central features of this concept.

KEY WORDS • prototype • romantic love • sexual desire

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Numerous taxonomies that specify types or varieties of love have been proposed (e.g. Hendrick & Hendrick, 1992). The majority of such classification schemes includes a variety of love referred to as romantic, passionate or erotic love. This particular type of love has assumed special importance in personal relationships research and in theoretical discourse on love for a number of reasons: Romantic love is generally sought after by individuals and exalted in western culture; romantic love has become the *sine qua non* of the marriage contract; and the absence of romantic love may be a factor in marital dissolution (for discussion, see Berscheid, 1985).

Perhaps as a result of its association with these significant life events, considerable theoretical speculation exists as to the important or essential antecedents, manifestations and consequences of romantic love. For example, Berscheid & Hatfield [then Walster] (1974) presented an early (and still widely accepted) theory of romantic love, which states that this type of love is characterized by intense physiological arousal, the belief that this arousal is caused by the beloved individual and is therefore appropriately labeled 'romantic love', a hodgepodge of both intensely positive (e.g. emotional need satisfaction) and intensely negative (e.g. jealousy) emotions, and a relatively short life-span. More recently, Hatfield & Rapson (1993) suggested that romantic love is best understood as 'a state of intense longing for union with another' (p. 5) that includes cognitive appraisals, subjective feelings (e.g. fulfillment, ecstasy, anxiety, despair), physiological processes, action tendencies and instrumental behavior.

The purpose of the present series of studies is to examine these theoretical statements by empirically exploring men's and women's cognitions — knowledge and beliefs — about the nature of romantic love. We rely upon prototype theory (e.g. Rosch, 1975), which provides one method of examining the mental representation of a variety of emotion concepts. Such mental representations undoubtedly have important individual and interpersonal implications. For example, people may rely upon their existing beliefs and assumptions about the nature of romantic love when interpreting events and experiences in their own relationships: An individual may compare elements of his or her current relationship ('I feel sexually attracted to X', 'I can openly communicate with X', and 'I trust X') with a cognitive representation of the concept of romantic love ('In addition to other things, romantic love consists of sexual desire, open communication and interpersonal trust'), and come to a conclusion that has direct consequences for that relationship ('I must be in love with X'). Thus, it seems of some import, from both a basic and an applied perspective, to examine people's mental representations of romantic love (as discussed by authors such as Aron & Westbay, 1996; Fehr, 1988; Fehr & Russell, 1991).

The prototype approach has been used to explore the internal structure of a variety of interpersonal concepts, including love. Fehr & Russell (1991), for example, asked men and women to generate as many types of *love* as they could in a specified time, and then asked another sample of individuals to rate these varieties of love in terms of prototypicality or 'goodness-of-example'. Of the subtypes generated, *maternal love* was rated as the best or most prototypical example of love, *infatuation* as the worst and *romantic love* as somewhere in the middle. Other researchers have focused upon identifying the prototypic characteristics (as opposed to types) of love. For example, in an early demonstration, Fehr (1988) asked one group of participants to list the characteristics of the concept 'love' (study 1, p. 560), and a second group to rate how central each feature was to the concept of love (study 2). Her results

revealed that love is believed to contain such central features as *trust, honesty and respect*. Similarly, Shaver et al. (1987) asked young adults to recall an incident in which they felt particularly 'in love or loving' (study 2, p. 1072) and to recount features of that experience. Features of feeling in love or loving included *wanting to spend time with the partner, shared experiences, good communication* and feelings of *warmth and trust* and *joy and happiness*. More recently, Aron & Westbay (1996) extended Fehr's work by exploring the underlying structure of the prototype of love. These researchers found evidence that the 68 prototypic love features identified by participants in Fehr's (1988) study could be reduced reliably to three latent dimensions (i.e. passion, intimacy and commitment).

The aforementioned research has provided converging evidence on the content of the mental representation of love. We were interested in a different type or variety of interpersonal attraction; namely, romantic love. In general, theorists and researchers agree that romantic love is different from other types of love or attraction (e.g. companionate love) and that it has its own central characteristics; however, there is significant disagreement over the exact nature of these features (Berscheid, 1988). The present research was designed to identify the central characteristics of romantic love and to determine how these features affect cognition. In doing so, we adhered closely to the methodology and procedures used by previous prototype researchers, most notably Fehr (1988) and Sharpsteen (1993).

This was a prototype analysis. For a concept to be organized prototypically, two criteria must be met (e.g. Rosch, 1975). First, individuals must be able to identify the characteristics of romantic love and to make judgments about the importance (i.e. centrality) of these features. Second, the centrality of these characteristics should influence cognition (i.e. recognition and recall) about romantic love. Thus, our research involved three phases. In study 1, participants listed all of the features of the experience of romantic love. In study 2, participants provided centrality ratings for the features identified in study 1. Finally, in study 3, participants completed recall and recognition memory tasks.

We had several a priori hypotheses. First, in accordance with theory on the nature of romantic love (e.g. Berscheid & Walster, 1974), we expected that participants would generate a variety of both positive and negative central characteristics.

Second, we expected that sexual attraction or desire would be viewed as more central to the concept of romantic love than would other aspects of sexuality (e.g. sexual activity). The notion that sexual desire is a distinguishing feature of romantic love is a common theme running through past (e.g. Freud, 1963; Lewis, 1960) and present (e.g. Berscheid, 1988; Sternberg, 1988) discussions of romantic love, and empirical research conducted with young adults, although sparse, supports this idea (e.g. Regan, 1998).

Third, if the concept of romantic love is indeed prototypically organized, then it is expected that central features of romantic love will be falsely reported more often than peripheral features during recall and recognition memory tasks.

Study 1: Compilation of prototypic features

Participants were 120 (50 men, 70 women, mean age = 19.17 years) introductory psychology students who attended sessions in groups of 5 to 10. Most

were heterosexual (96%), and their racial/ethnic background was Caucasian (38%), Latino (32%), Asian/Asian American (17%) and African-American (14%).

Participants listed in a free response format all of the characteristics or features of the experience of romantic love (i.e. 'being in love'). They were reminded that these features or characteristics could include emotions, feelings, thoughts, behaviors, actions or events and in addition could range from positive to negative. Each participant received up to 45 minutes to complete the task (average time required = 16 minutes).

Two undergraduate coders, blind to hypotheses and participant sex, compiled a verbatim list of all of the specific features of romantic love generated by the participants. These specific features and characteristics were then grouped into (relatively) larger categories (e.g. Fehr, 1988). Features were placed in the same category if they were modified by adjectives such as 'a great deal of' or 'strong' or if they were judged to be similar or identical in meaning. Throughout this process, the coders remained as true as possible to the participants' own wording of the features. The coders identified 119 non-redundant features.

Two additional raters coded participants' responses for the presence or absence of each feature. The formula for computing interrater agreement (concordance estimates) was as follows (e.g. Gonzales et al., 1990): $C = 2(C_{1,2}) / (C_1 + C_2)$, where C = concordance for response, $C_{1,2}$ = number of identical categories assigned by both raters, and C_1 and C_2 = total number of categories assigned by the first and second raters, respectively. Concordance ranged from .667 to 1.000, with a mean of .997 across responses and with 99 percent of responses yielding rates of .90 or higher.

As illustrated in Table 1, the most frequently generated features included trust (80.0%), sexual attraction/desire (65.8%), acceptance and tolerance (50.8%), spend time together (44.2%) and share thoughts and secrets (44.2%). Least generated features included submission/obedience (1.7%), controlling (1.7%) and selfishness (1.7%).

Study 2: Centrality ratings of prototypic features

A second group of 100 adults (49 men, 51 women, mean age = 19.73 years) participated. They were Caucasian (68%), Latino (20%), Asian/Asian American (10%) and Other (2%); most were heterosexual (97%), had previously been in love (85%) and currently were in love (59%).

Participants rated how well each feature identified in study 1 characterized the experience of romantic love, using a 9-point, Likert-type scale with the endpoints 1 ('not at all central/extremely poor feature') and 9 ('extremely central/extremely good feature'). Specifically: 'We would like you to think of the concept of "romantic love," or the state of "being in love". Romantic love has a number of different features or characteristics. Some of these features may be very central (important or essential) to the experience of romantic love. Other features may be less central to romantic love — we don't automatically think of them when we think of the state of "being in romantic love". We have put together a list of features that we would like you to examine. For each feature, we would like you to indicate how central (important or essential) you think it is to the concept of romantic love, using the 1 to 9 scale provided.'

Mean ratings across participants determined feature centrality. Specifically,

TABLE 1
Prototypic romantic love features: Frequency and centrality

Feature	Frequency (%)	Centrality rating
Central Features	80.0	8.26
Trust	40.0	7.93
Honesty	35.8	7.88
Happiness	10.0	7.88
Attachment/bond	39.2	7.73
Companionship/friendship	32.5	7.72
Respect	36.7	7.68
Communication	34.2	7.67
Caring	14.2	7.58
Intimacy	17.5	7.57
Smiles/laughter	65.8	7.55
Sexual attraction/desire	25.0	7.54
Fidelity/loyalty	7.5	7.50
Closeness (emotional)	44.2	7.46
Spend time together	44.2	7.41
Share thoughts and secrets	17.5	7.39
Touching/holding	25.8	7.35
Passion	32.5	7.34
Commitment	10.8	7.29
Feeling needed/wanted	13.3	7.29
Affection	17.5	7.28
Miss other/want to be together	10.8	7.27
Fun	19.2	7.10
Mutuality/partnership	9.2	7.05
Stronger over time	20.0	7.03
Support	16.7	6.98
Excitement	2.5	6.93
Special	32.5	6.91
Kindness/thoughtfulness	20.8	6.90
Security	10.0	6.82
Devotion	9.2	6.81
Want to please other	15.0	6.76
Unity/completeness/fulfilment	20.0	6.76
Positive emotions ('warm fuzzies')	10.0	6.66
Kissing	25.0	6.60
Comfortable	17.5	6.56
Day dream/think about other	3.3	6.56
Joy/rapture	10.8	6.51
Warmth	19.2	6.42
Forgiveness	25.0	6.40
Sexual activity	2.5	6.39
'Chemistry'	17.5	6.34
Dependability	2.5	6.33
Fondness	5.8	6.26
Tenderness	8.3	6.17
Admiration	11.7	6.16
Making compromises	5.0	6.12
Maturity	15.8	6.08
Romance (e.g., candlelit dinners)	50.8	6.05
Acceptance/tolerance	2.5	6.04
Appreciation	5.8	5.98
Heart 'races'	8.3	5.96
Beauty	4.2	5.95
Cannot live without each other	4.2	5.94
Honor/integrity	1.7	5.91
Fate	5.8	5.82
Idealistic ('the perfect experience')	40.0	5.82
Personal sacrifice	31.7	5.81
Shared interests	15.8	5.80
Do special things for other (e.g. gifts)	5.8	5.76
Giddiness/walking on air		

TABLE 1 (Continued)

Feature	Frequency (%)	Centrality rating
Peripheral Features		
Adoration	1.7	5.75
Gentleness	5.8	5.75
Unconditional	4.2	5.74
Carresses	1.7	5.73
Flexibility	7.5	5.64
Self-esteem enhancement	7.5	5.61
Generosity	11.7	5.52
Flirting	4.2	5.43
Pride/proud of other	5.0	5.39
Nurturance	3.3	5.38
Silliness	8.3	5.33
Obligation/responsibility	17.5	5.27
Spontaneity	4.2	5.23
Allowing partner 'space'	11.7	5.18
Advice/guidance from other	5.0	5.18
Arguments	12.5	5.11
Nervousness	9.2	5.10
No physical abuse	1.7	5.08
Peace/tranquility	4.2	5.04
Sympathy	5.8	5.03
Anticipation	3.3	5.00
Marriage	6.7	5.00
Empathy	4.2	4.96
Time consuming/hard work	12.5	4.85
Establish own traditions	2.5	4.79
Challenging/stressful	10.0	4.75
Dependent on other	8.3	4.69
Enhanced self-awareness	9.2	4.61
Frustration	7.5	4.58
Overwhelming	5.8	4.57
Jealousy	37.5	4.48
Worry	5.0	4.38
Heartache/sorrow	17.5	4.38
Tactfulness	1.7	4.37
Vulnerability	1.7	4.37
Intelligence	12.5	4.28
Innocence/purity	3.3	4.24
Carefree	2.5	4.21
Insecurity/uncertainty	3.3	4.10
Anger	17.5	4.09
Close with other's family	2.5	4.07
Late night phone calls	2.5	4.01
Possessiveness	3.3	3.98
Obsession/infatuation	6.7	3.95
Confusing/irrational	10.8	3.83
Sadness	10.0	3.81
Fear	9.2	3.60
Loss of control/freedom	2.5	3.44
Unrealistic/fairy tale	2.5	3.36
Shyness	1.7	3.28
Live together/cohabitation	1.7	3.27
Bittersweet	1.7	3.19
Have children together	3.3	3.11
Regret	1.7	3.01
Selfishness	1.7	2.90
Controlling	1.7	2.83
Depression	10.8	2.83
Lies/deception	4.2	2.74
Submission/obedience to other	1.7	2.44

Note: Frequencies represent the percentage of participants ($N = 120$) who spontaneously listed that feature. Centrality ratings were made on a scale ranging from 1 ('not at all central/extremely poor feature') to 9 ('extremely central/extremely good feature').

features were divided into two groups (central versus peripheral) on the basis of a median split of the mean centrality ratings. (As noted by others (e.g. Sharpsteen, 1993), centrality is more appropriately considered to be a continuum; however, a central/peripheral division, although somewhat artificial, allowed for the creation of the experimental measures used in study 3). Features with a rating of 5.76 or higher were considered central. As illustrated in Table 1, central features included trust (8.26), honesty (7.93), happiness (7.88) and sexual attraction/desire (7.55); peripheral features included submission/obedience (2.44), deception/lies (2.74) and depression (2.83). Although there was not a perfect correspondence between frequency and centrality ratings, a correlational analysis revealed that, in general, the most frequently generated features were also rated as the most central, $r = .56, p < .001$.

Study 3: Recall and recognition memory tasks

In our final study, 100 undergraduates (50 men, 50 women, mean age = 18.87 years) participated individually for course credit. Our sample was Caucasian (80%), Latino (15%), African-American (5%) and Other (2%); the majority was heterosexual (94%); 82 percent had been 'in love' before, and 54 percent were 'in love' at the present time.

The entire study was conducted through cassette player headphones. (This procedure enabled the researcher to standardize the instructions, as well as the amount of time that each participant received for the various phases of this study.)

Participants were informed that they would be asked to read 20 sentences that described a relationship between two individuals ('Cathy' and 'Robert'). Sentences were presented in a 20-page booklet designed so that a single sentence was centered on each page. In order to create these sentences, features were inserted into the following framework: 'Cathy and Robert's relationship is characterized by ——' (e.g. trust). Every participant received a different random order of the set of sentences, and was given 3 seconds to read each one. The materials were constructed by selecting the 20 most central features and the 20 least central or most peripheral features and then randomly dividing them into two groups (10 central features for sentence group 1 and 10 peripheral features for sentence group 2). Participants were randomly assigned to either sentence group 1 or to sentence group 2. We used two 20-sentence groupings in order to allow for a false recognition task (see below).

Participants then listed, in 3 minutes, as many of the United States (in alphabetical order) as possible on a blank page provided in the booklet.

Next, participants were instructed to recall, in 3 minutes, as many of the characteristics of Cathy and Robert's relationship as possible. They were urged to focus on recalling the specific features of the relationship rather than the entire sentence.

In the final phase of this study, each participant was presented with the same set of 40 statements, randomly ordered for each individual. This set of sentences consisted of the 20 sentences that participants had viewed in the acquisition phase as well as the 20 sentences that were presented to the other half of the participant sample. Therefore, each participant was exposed to 20 sentences that he or she had previously seen, and 20 sentences that he or she

had not previously seen. The tape-recorded instructions asked participants to indicate by circling 'yes' or 'no' whether they recognized the sentences from the acquisition phase.

For purposes of recognition analysis, participants' responses were divided into the following categories: 'Hits' (defined as presented and correctly recognized central or peripheral features), 'misses' (defined as presented central or peripheral items that were incorrectly rejected by the participants), 'false alarms' (defined as not presented but incorrectly recognized as central or peripheral features), and 'rejection hits' (defined as not presented and correctly rejected central or peripheral features). For presented features, no significant difference was found between the mean number of 'hits' (presented and correctly recognized items) and the mean number of 'misses' (presented and incorrectly rejected items) for central and peripheral features. For items that were not presented, participants made a correct decision for peripheral features more often than they did for central features; that is, the mean number of unrepresented peripheral features that were correctly rejected (8.54) was significantly greater than the mean number of unrepresented central features that were correctly rejected (6.82), $t(99) = -7.96, p < .001$. A significant difference was also found for false recognition ('false alarms'); the mean number of not presented but (incorrectly) recognized items was greater for central (3.28) than for peripheral features (1.43), $t(99) = 8.24, p < .001$.

For purposes of recall analysis, we tallied the number of 'hits' (central and peripheral items that were presented and correctly recalled) and 'false alarms' (central and peripheral items that were not presented in the acquisition phase of this study but that were members of the original list of features generated by study 1 participants). A *t*-test revealed no significant difference with respect to the number of 'hits' for central versus peripheral features. However, there was a significant difference with respect to the number of 'false alarms' for central and peripheral features; participants falsely recalled a greater number of central than peripheral features (.68 versus .30, $t(99) = 3.79, p < .001$).

Correlational analyses were conducted to examine the internal structure of the romantic love concept. Recall that the frequency with which features were spontaneously generated was significantly correlated with ratings of feature centrality, $r = .56, p < .001$. We also examined the correlations between frequency and centrality and a recognition measure (i.e. false alarms) for the 40 features used in this study; the number of times a feature was incorrectly recognized (a false alarm) was positively correlated with both its frequency ($r = .56, p < .001$) and its centrality ($r = .57, p < .001$).

Discussion

As noted earlier, social and behavioral scientists have made a number of theoretical and empirical attempts to answer the question, 'What is romantic love?' The results of this series of studies suggest that the prototype approach (e.g. Rosch, 1975) may be particularly useful in delineating the features of romantic love as well as other interpersonal phenomena. For example, the concept of romantic love clearly has an internal structure and meets the two criteria for prototypic organization. Specifically, our participants were able to make meaningful decisions about the degree to which various features were central (i.e. important or essential) or peripheral (i.e. less important or essential) to their understanding of the concept of romantic love. In addition,

feature centrality affected the way participants processed information about a romantic love relationship. In particular, activation of the romantic love prototype made it more difficult for our participants to accurately differentiate between presented and not presented central features (e.g. they incorrectly recognized and recalled more central than peripheral features). These results, coupled with the significant intercorrelation between the measures of frequency, centrality and false recognition, suggest that romantic love has a clear internal structure and indeed is prototypically organized.

The primary goal of the present research was to identify the central and peripheral features of romantic love. Theorists (e.g. Berscheid & Walster, 1974) have speculated that the experience of romantic love is characterized by a variety of conflicting emotions that range from intensely positive (e.g. emotional need satisfaction) to intensely negative (e.g. jealousy). However, we found evidence only for the former. The majority of features cited by our participants in their free responses was 'positive' (e.g. trust, honesty, happiness, companionship, kindness, respect). In addition, not only did study 1 participants spontaneously generate very few 'negative' features (e.g. anger, depression, fear), but study 2 participants also perceived those features as peripheral to the romantic love experience. Although theoretically unexpected, these results are in accord with previous empirical research on (not necessarily romantic) love utilizing a prototype approach. For example, the most negative features generated by Fehr's (1988) participants in their descriptions of love were sacrifice, miss other when apart, uncertainty and scary. Similarly, the only remotely negative feature of feeling 'in love or loving' described by Shaver et al.'s (1987) participants was being forgetful/distracted.

It is possible that our participants, along with the other young, college-educated samples commonly utilized in prototype research, were describing their version of the 'ideal' romantic love experience; that is, requited romantic love or romantic love experienced for another individual who reciprocates one's feelings. Our participants might or might not have generated a vastly different set of features had we asked them to describe unrequited romantic love. Some empirical evidence suggests that unrequited romantic attraction is associated with negative affect (e.g. Baumeister et al., 1993). It is also possible (and likely), however, that the state of being in love in actuality shares many features with the state of loving; that is, these two types of love may not be as distinct as earlier theoretical discourse suggests.

A related goal of the present research was to explore the association between sexuality and the concept of romantic love. As predicted, and in accord with other research (e.g. Regan, 1998), sexual desire or attraction was perceived as both common and central to the experience of romantic love. Out of 119 features, sexual desire received the second highest frequency rating and the eleventh highest centrality rating. In addition, this feature was viewed as more central to the romantic love concept than such aspects of sexuality as kissing, touching/holding, and sexual activity. This supports the notion that subjective, psychological sexual phenomena are viewed as more essential to the romantic love experience than behavioral sexual events.

Some limitations must be noted. This study focused on the content of romantic love as described by college-educated, young (primarily) heterosexual adults. It does not address the possibility that the romantic love prototype may change as a function of relationship and/or sexual experience, age and other individual and/or interpersonal variables. We feel that it is very impor-

tant for researchers to expand upon the present work by examining the development of people's mental representations of romantic love, and by exploring how these representations might be influenced by particular life experiences (for example, it is possible that relationship termination, or an unrequited love experience, might significantly alter one's understanding of romantic love).

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