"Love is a many splendored thing. Love lifts you up where you belong. All you need is love." - Elephant Love Medley, Moulin Rouge

Look to music, art, theater or dance and you'll find that love and romantic relationships are often the central focus of a work. Whether it's the excitement of a new romantic possibility or mourning a failed relationship, artists try to capture the meaning of love all the time. If the profusion of cultural references is any indicator, the desire to form romantic relationship is a widespread human desire that can be all consuming at times. Thus understanding how romantic relationships are formed is a question that is vital to understanding the human experience.

Psychologists recognize this desire and have studied how romantic relationships form and the types of factors that influence relationship formation. One model of how relationships form looks specifically at workplace romance (Pierce, Byrne, and Aguinis 1996). The model suggests that one pathway to romantic attraction contains several antecedents: proximity, repeated exposure, recognition of attitude similarity and interpersonal attraction. The model also acknowledges that overt body characteristics or physiological arousal may directly lead to romantic attraction. In each of these pathways, proximity plays a key role. In fact, "the smaller the physical and functional distance between two people, the more likely they are to be attracted to each other" (Pierce, Byrne, and Aguinis 1996, 10). So it seems that in order to fall in love, a person must have a likely candidate nearby.

The internet is playing an increasingly large role in social interaction and has the potential to greatly reduce the functional distance between many people. Thus, it is also having an impact on the formation of romantic relationships. More and more people are using internet sites to meet possible partners, and the model of relationship formation for those who meet online is different from those who meet in more traditional ways. The certain features of the internet may allow people to speed through certain stages of relationship formation or skip other stages entirely. The ability to easily find others with shared interests might allow people to jump straight to recognition of attitude similarity, skipping the traditional antecedents of proximity and repeated exposure. Additionally, the greater anonymity of the internet decreases the risk of self-disclosure. Self-disclosure, along with partner disclosure, has been shown to produce "greater intimacy and closeness" (McKenna, Green, and Gleason 2002, 9). This may speed recognition of attitude similarity. The difference between forming relationships online and off-line is significant enough to inspire a separate vein of research.

Online dating touches on a wealth of relevant psychological topics from identity to relationship formation to attitudes. Examining the topic through these various lenses can help to further understand this fast growing phenomenon and might result in changes to existing online dating sites that might make online interactions more successful and more meaningful.

Personality and Online Dating

As more people turn to the internet to find romantic relationships, one important question to ask might be "What kinds of people use online dating sites?" While there have been virtually no studies looking into the characteristics of online daters, educated guesses can shed light on what a person might find online. On the trait level of personality, one might expect to find that online daters are relatively high in their Openness to Experience trait score. Online dating is a relatively new phenomenon so you might expect a large portion of the early adopters to be prone to some degree of risk taking. Further evidence to support the high trait Openness to Experience theory is that there is an additional personal risk in meeting strangers from the internet off-line.

Another approach to identifying the characteristics of those who are on online dating sites is determining the characteristics of those who have not joined online dating sites. One factor that might discourage people from joining online dating sites is the current lack of cultural narratives about dating sites. Stories about people finding love or happiness via online dating are relatively uncommon (especially when compared to "we met in high school/college/grad school" stories and the like). This is particularly relevant to the concept of narrative identity. "Life stories speak to how a person integrate s his or her life in time and social context and what he or she believes that life means, ultimately expressing the person's narrative identity" (McAdams, Bauer, Sakaeda et al, 2006, 1372). Finding a romantic partner, especially a long-term partner, is likely to be an important part of a person's life story. It seems unlikely that a person would pursue such an important goal through a route that was deemed culturally irrelevant or ineffective. Until there are more cultural scripts about finding love online available for narrative identity modeling, online dating is likely to be limited in popularity.

Cognitive Psychology and Online Dating

When a person is dating online, the information about a potential partner is limited. Online dating profiles often consist of a list of interests, a short bio and maybe a few carefully selected pictures. A particularly robust profile might also contain a video greeting. These profiles are missing many of the elements that comprise an off-line first impression. A person can't tell if their potential match has a

stutter, smells bad, is a little socially awkward, or isn't actually as attractive as that photo taken five years ago. In an off-line meeting, these factors might derail a potential relationship before it starts. The lack of these 'gating features' means that those who are less physically attractive or socially awkward have a chance to develop relationships to the point where disclosure of intimate information could begin (McKenna, Green, and Gleason 2002).

Although the gating features are not present, online dating profiles still contain a wealth of information that can be used to assess a potential romantic partner. The difference may lie in how the information is processed. When a person goes about identifying potential partners in the real world, they use a number of patterns or 'types' (e.g. "tall men who wear flannel shirts" or "women with red hair"). Identifying possible partners in this way is an example of peripheral route processing. This kind of processing is "much less effortful and allows us to react to [stimuli] in an automatic way" (Baron 138). When using an online dating profile to assess potential, the person's interests and bio offer more substantial information to process. A person can now spend the time to pour over the details before sending a first message, rather than making a snap decision before the other person's coffee order is filled. This type of careful decision making is central route processing and understandable takes much more effort. In central route processing, "argument strength *is* important"—a fact that may lead people to make better potential match selections.

Attitudes and Online Dating

The anonymity of the internet allows people to express their attitudes and beliefs with little fear of backlash from friends and family. Honest expressions of attitudes are particularly important to the formation of romantic relationships. Research has shown that relationships work well when people share similar attitudes and beliefs. In fact, "the greater proportion of similar attitudes shared between two individuals, the greater likelihood that the dyad will like one another" (Pierce, Byrne, and Aguinis 1996, 12).

The way attitudes are expressed and shared online compared to off-line may have important implications for relationship formation. In an off-line setting, people may state their beliefs in a more moderate fashion, waiting for visual or physical cues of agreement before expressing their beliefs more strongly. This is consistent with the impression motivation function of attitudes. People often "wish to make a good impression on people, and expressing the 'right' views is one way of doing so" (Baron 126). Physical or verbal cues of disagreement from a potential romantic partner may be detrimental to self-

esteem, as most people tend to believe that they hold the "right" beliefs (Baron 126). With an online profile, other users can browse interests and interact with those whom they deem to be a sufficient match. Users who reject or disagree with a particular profile are likely to pass it by, leaving the profile owner unaware of the incompatibility and no worse off.

Psychology + Technology and Online Dating

One concern with the increasing popularity is how the increased use in the internet is affecting the people using it. In the 1990's there were concerns that teenagers spending too much time on the internet would lose connection with their friends and family in favor of superficial online connections with strangers. Many people were asking, "Is the internet bad for you?" Recent studies suggest probably not. Research looking into instant messaging found that online communication led to increased self-disclosure which in turn led to enhanced relationship quality and overall improved wellbeing (Valkenburg, and Peter 2009). However these benefits seem to only exist when IM is used to communicate with existing friends. When it is used "to form new contacts and talk with strangers, the positive effects do not hold" (Valkenburg, and Peter 2009, 2).

Because internet dating is primarily about meeting new people, this distinction may have negative implications on the benefits of online dating and wellbeing. "Communication technologies that are predominantly used to communicate with strangers . . . have no effects or even negative effects on social connectedness and well-being" (Valkenburg , and Peter 2009, 3). More research is need to determine if technologies that are used to talk to strangers but also to attempt to form intimate relationships, like internet dating sites, have a positive or negative affect on a person.

Psychopathology and Online Dating

One sector of the population that has shown to have benefited from online dating are those who are social anxious. Given that those with social anxiety express fears of "situations in which they might be evaluated or judged by others" (Mineka, and Zinbarg 2006, 15), it is understandable that dating and pursuing romantic partners would be difficult for someone with social anxiety. The origins of social phobias can perhaps further the understanding of why online dating benefits the socially anxious and how it can be further improved to their benefit.

There are several theories as to the origins of social anxiety. One perspective extends preparedness theory to social anxiety, noting that subtle cues of social dominance may unconsciously

trigger fear conditioned responses. Studies have found that fear conditioned responses can be conditioned to subliminal presentations of angry facial expressions. This implies that "a person can claim to 'know' a social situation is safe and yet still experience anxiety that is automatically activated in response to subtle cues that are not consciously processed" (Mineka, and Zinbarg 2006, 15). It would be difficult for an off-line first date or interaction to go well if a person is particularly receptive to such cues. Establishing a relationship online before meeting in person may help to mitigate the effects of these cues.

Another factor that seems to play a large role in developing social anxiety is traumatic social experiences coupled with a high degree of perceived uncontrollability (Mineka, and Zinbarg 2006). Animal research has shown that both uncontrollable electric shock and repeated social defeat lead to "increased submissiveness to any other conspecific behaving in an aggressive manner" (Mineka, and Zinbarg 15). Given that uncontrollability is one of the factors that contributes to social anxiety, media that allow for increased control may benefit the socially anxious. When forming relationships online, people "gradually, through a series of stages, give up the safety and control over the interaction afforded by the Internet for the greater physical reality and intimacy —but greater risk and lower personal control —of the real world"" (McKenna, Green, and Gleason 2002, 19). Sites that give users the desired level control are likely to receive high marks from socially anxious users.

Positive psychology and Online Dating

Positive psychology may be the field of psychology that can most advance the study of the formation of romantic relationships online. One of the missions of positive psychology is to foster excellence. Rather than focusing on those who suffer, positive psychology aims to provide examples and advice to "normal" people on how to reach a richer and more fulfilling (Seligman, and Csikszentmihalyi 2000). For the most part, those who use online dating sites are not suffering perse; they are just pursuing romantic connection in a new way. Understanding more about how strong and healthy relationships are formed online could help improve existing service.

One subfield of positive psychology that might be particularly relevant to forming romantic relationships is the study of enjoyment versus pleasure. Pleasure is "the good feeling that comes from satisfying homeostatic needs such as hunger, sex and bodily comfort" while enjoyment refers to "the good feelings people experience when they break though the limits of homeostasis... an athletic event, an artistic performance, a good deed, a stimulating conversation" (Seligman, and Csikszentmihalyi 2000,

12). In terms relevant to online dating, those who are seeking pleasure might be looking for casual sex while those looking for enjoyment might be looking for short- or long-term dating. Understanding more about how and why people pursue either pleasure over enjoyment might help create better services for either or both.

Understanding the role online dating plays in the contemporary social experience is a complex endeavor. It is an undertaking that requires careful consideration of both individual differences and universal similarities. It necessitates an understanding of the effects of several different mental illnesses. It demands creative exploration of 'bright spots' and calls for a better understanding of internet as a communication medium. The variety of subjects that are connected to the formation of romantic relationships online is immense. It seems almost a herculean task for one person or even a group of people.

Yet this is exactly what product managers and user experience designers of online dating sites do (or should) attempt. These people are shaping the way millions of people communicate, and while some of their design decisions are the result of accidental brilliance, hopefully those who are designing the dating sites of the future will draw more on the relevant psychological research. Applying a psychological lens to product design can lead to products that are intelligent, beautiful and beneficial to the people who use them. The potential to create new ways of finding love is both exciting and incredibly important. "Some people want to fill the world with silly love songs. Well what's wrong with that? I'd like to know" ("Elephant Love Medley," Moulin Rouge Soundtrack).

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