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People as Products: Exploring Replication and Corroboration in the Dimensions of Theory, Method and Context

Mana Farshid, KTH Royal Institute of Technology, Sweden
Sarah Lord Ferguson, Simon Fraser University, Canada*
Leyland Pitt, Simon Fraser University, Canada
Kirk Plangger, King’s College London, United Kingdom

Abstract
This paper corroborates Hirschman's (1987) "People as Products" work by first replicating it in a different context, and then extending it by using new methodologies that examine partner-seeking through a different theoretical lens. The replication finds that some of the original hypotheses hold, some did not, and some, in fact, reversed. This extension shows significant differences between male and female partner seekers on important linguistic psychology dimensions, namely clout, authenticity and tone. Managerial implications relate to emerging trends in human brands, specifically how the words that people use to describe themselves may impact the success or otherwise of human branding and influencing efforts. Overall, the paper demonstrates how an original study can be corroborated and extended in meaningful and interesting ways by varying the context, methodology, or theoretical backdrop, while keeping the problem constant.

Keywords: Replication, corroboration, extension, context, methodology, theory

* Corresponding Author: Sarah Lord Ferguson: stl10@sfu.ca

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People as Products: Exploring Replication and Corroboration in the Dimensions of Theory, Method and Context

1. Introduction

The physicists Pons and Fleischman fell quickly from grace to ridicule in 1989 when other scientists were unable to corroborate or find evidence that confirmed their claims to have achieved cold fusion. Using exactly the same methods as Pons and Fleischman, researchers in other laboratories could not produce the same results, and the work was very quickly shown to have fatal flaws. Replicability, or the quality of being able to be exactly copied or reproduced, is a fundamental requirement in the pure sciences. In other words, a study should produce the same results if repeated exactly. However, corroborative studies are far less common in most areas of business and management research. As far back as the 1990s, Hubbard and Armstrong (1996) found that such research constituted less than 10% of papers published in accounting, economics, and finance, and less than 5% in management and marketing. Their previous work in marketing, specifically, had found replications to be especially rare (Hubbard & Armstrong, 1994). The situation has not changed much since then.

There are a few reasons why replications do not get published in the prestigious business journals. First, there is the chicken-and-egg situation in which replications do not get submitted to prestigious journals because prestigious journals do not publish replications, and prestigious journals do not publish replications because these studies are seldom submitted (Hubbard, Vetter & Little, 1998). A more substantial reason might be that the results of straightforward replicative research are simply not interesting enough to warrant publication (Nosek, Spies & Motyl, 2012). In information systems literature, Berthon et al. (2002) suggest a third reason: researchers have lacked a framework to conceptualize, structure, and guide replication research efforts. Using the Replication, Extension, Generation (REG) framework that these authors propose, it is not only feasible for researchers to carry out a thorough and precise corroborative research project, it is also possible to generate creative ways of conducting additional and valuable research in the same or a related domain.

This paper employs the Berthon et al. (2002) REG framework to corroborate and extend the work of Hirschman (1987). We proceed as follows: we start by briefly explaining the framework for replicative research developed by Berthon et al. (2002), and also summarize Hirschman’s (1987) “People as Products” paper, justifying its selection as an object of corroboration. Then, we describe a study conducted to replicate and extend Hirschman’s (1987) original work and report the results of our replication and extension studies. We conclude by discussing the managerial implications of the results, acknowledging the limitations of the study, and outlining avenues for future research.

2. A Framework for Envisioning and Evaluating Research Replication, Extension and Generation

Berthon et al. (2002) distinguish between three types of scientific studies. The first is a pure replication, which would simply be a perfect duplication of a previous study in which all key parameters are held constant. Pure, or perfect, replications are achievable in the pure sciences; however, they are not possible in the social sciences because time cannot be held constant. The second type of study is an extension study, which is a duplication of previous work in which one or more key parameters are changed while the others remain constant.
Finally, a third type of study is a *pure generation*, and this is a study in which all key parameters are changed; simply, it is an entirely new study that neither replicates nor extends.

Figure 1 shows a simplified model of the REG framework introduced by Berthon et al. (2002). The authors present the notion of a “research space” comprised of four primary parameters: The *problem* (or phenomenon) specifies and delimits the focus of the research—it specifies *what* is being investigated. The *theory* answers questions as to *why* certain problems/phenomena might occur. The *method* addresses the issue of *how* one might go about generating knowledge about the problem/phenomena. The *context* concerns the *who, what, and where*—the phenomenological setting and content of the problem.

**Figure 1: Research Replication, Extension, Generation (REG) Framework (with Problem/Phenomenon held constant)** *

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Of the four primary parameters referred to above, the problem or phenomenon is held constant in the framework, as we assume that we wish to address the same research question. A simple replication study would address this problem using the same theory, to study the problem in the same context, and employ the same methodology as the original study. As already referred to previously, a perfect replication in the social sciences is not possible because of time, or the passage thereof. A researcher could of course extend an original study by changing one or more of the three parameters: using a different theoretical lens, employing a different methodology, or conducting the study in a different context. Berthon et al. (2002) argue that the REG framework serves as a useful tool for researchers to identify fruitful future research ideas and opportunities, and for journal editors and reviewers to use to gauge the novelty and merit of research submissions. In the next section, Hirschman’s (1987) project is discussed and also employed to illustrate the use of the REG framework.

3. Hirschman’s (1987) “People as Products” Study

Hirschman’s (1987) paper on people as products might seem an esoteric choice for research corroboration. After all, it is more than 30 years old, and not published within the past ten years. Furthermore, it has only garnered just over 230 citations on Google
Scholar, despite being published in one of the premier marketing journals. However, we defend our focus on this paper by noting the following: first, it offers a unique opportunity to explore the three dimensions of the REG framework described above (Berthon et al., 2002). Many papers in marketing with far more citations focus primarily on theory (e.g., Vargo & Lusch, 2004), method (e.g., Parasuraman, Zeithaml & Berry, 1988), or context (e.g., Arnould & Price, 1993), rather than on all three of these dimensions. Second, Hirschman’s (1987) work permits us to focus on a very common problem that has not changed throughout human history (i.e., partner seeking), while everything around the problem has changed, namely new theories, different contexts, and a host of new methodological tools. Third, the paper is grounded in what was viewed by many at the time to be a fundamental theoretical contribution to the study of marketing, namely Bagozzi’s (1975) conceptualization of social exchange theory as a concept to explain marketing as exchange, a paper that has indeed been cited almost 3,000 times on Google Scholar. This provides current researchers with an opportunity to explore just how well this theory explains exchanges in the modern milieu, despite the changes in socio-cultural, political/legal, economic and technological environments that have occurred in the past thirty years.

Figure 2: Hirschman’s (1987) Study on the REG Framework

Hirschman (1987) conducted her study in response to recent theoretical advances in marketing with regard to exchange theory, or more specifically the notion of marketing as an exchange process (Bagozzi, 1975). The latter work spurred considerable further interest among marketing scholars (Bagozzi, 1978, 1978; Kotler, 1979; Stern & Reve, 1980; Fox & Kotler, 1980) particularly because it continued to broaden the notion of exchange beyond mere commercial transactions and was eventually incorporated into the American Marketing Association’s definition of marketing in 1985 (Brown, 1985). Noting, that despite these advances, very little
empirical research activity had incorporated the theoretical progress, Hirschman (1987) embarked on a study of a very fundamental exchange behavior between humans: the seeking of partners by heterosexual human males and females. Her fundamental research question (or the constant problem on the REG framework) was: “What do partners offer and seek in heterosexual partner-seeking as an example of complex, heterogeneous marketing exchange?” Hirschman’s (1987) approach to the research is summarized and illustrated in the adapted REG framework in figure 2 and then described in more detail.

Hirschman (1987) used a special case of social exchange theory in her work, namely resource exchange theory (Foa, 1976; Foa & Foa, 1974; Foa & Foa, 1980), because it was “one of the few social interaction theories to address multiple, heterogeneous resource exchanges” (p. 99). Foa & Foa (1974) view social exchanges as interpersonal encounters in which resources are taken and given away, and that these exchanges will occur when the parties are motivated to, and in an environment that is conducive to this type of exchange. Donenwerth and Foa (1974) identify and define six categories of heterogeneous resources, namely goods, services, love, status, information and money.

Based on this theoretical frame, Hirschman (1987) expanded the resource categories described above to include physical status, educational status, occupational status, entertainment services, demographic information, ethnic information, and personality trait information for partner seeking. Hirschman (1987, p. 101) defined these categories as follows:

- **Love**—an expression of emotional commitment, companionship, warmth, or comfort; emotional/affectionate personality traits,
- **Physical status**—physical characteristics of an individual that are valued highly in our society,
- **Educational status**—a formal education at a prestigious university or advanced graduate degrees,
- **Intellectual status**—above average intelligence or characteristics typically associated with high intelligence,
- **Occupational status**—an occupation that is held in high regard or esteem in society,
- **Entertainment services**—nonsexual activities that can be done with another person,
- **Money**—an expression of wealth, financial well-being, or affluence,
- **Demographic information**—general descriptive characteristics about a person (e.g., marital status, age, place of residence),
- **Ethnic information**—statements about race, religion, nationality, or ethnic affiliation,
- **Personality trait information**—statements about one’s personality (does not include traits related to sexual or emotional characteristics).

All these resources, she contends, can be both offered and sought by persons in a partner seeking exchange situation. Her focus was on the extent to which males and females would both offer and seek these resources in heterosexual partner seeking, and whether there would be differences between males and females with regard to the extent to which they offered and sought these resources.

In order to study human heterosexual partner seeking as a form of social exchange, Hirschman (1987) chose the context of personal advertisements in magazines, arguing that they were a “…clear form of marketing exchange, even in the most traditional sense. People must pay to place the advertisements, just as do breakfast cereal
companies…” (p.101). The two magazines she chose as the source of personals ads were New York and The Washingtonian, and a year’s series of ads were collected from each. The final sample consisted of 201 male- and 204 female placed ads, distributed more or less evenly between the two magazines.

Table 1: Hirschman (1987) Hypotheses, Results and Comparisons with the Current Study

<table>
<thead>
<tr>
<th>Hirschman (1987) Hypothesis</th>
<th>Hirschman Result</th>
<th>Our Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$: Men more frequently seek physical attractiveness resources than will women</td>
<td>Sig. p&lt;.001</td>
<td>Reject: Women more frequently seek physical attractiveness resources than will men Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_2$: Women will more frequently offer physical attractiveness resources than will men</td>
<td>Sig. p&lt;.05</td>
<td>Accept. Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_3$: Women will more frequently seek money resources than will men</td>
<td>Sig. p&lt;.001</td>
<td>Accept. Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_4$: Women will more frequently seek educational status resources than will men</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$H_5$: Women will more frequently seek occupational status resources than will men</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$H_6$: Women will more frequently seek intellectual status resources than will men</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$H_7$: Men will more frequently offer money resources than will women</td>
<td>Sig. p&lt;.05</td>
<td>NS</td>
</tr>
<tr>
<td>$H_8$: Men will more frequently offer educational status resources than will women</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$H_9$: Men will more frequently offer occupational status resources than will women</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$H_{10}$: Men will more frequently offer intellectual status resources than will women</td>
<td>NS</td>
<td>Reject: Women more frequently offer intellectual status resources than will men Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_{11}$: Women will more frequently offer love resources than will men</td>
<td>NS</td>
<td>Accept. Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_{12}$: Women will more frequently offer entertainment service resources than will men</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$H_{13}$: Women will more frequently offer DEP information resources than will men</td>
<td>Reversed. Men will more frequently offer DEP information resources than will women Sig. &lt;.10</td>
<td>NS</td>
</tr>
<tr>
<td>$H_{14}$: Men will more frequently seek love resources than will women</td>
<td>NS</td>
<td>Reject: Women will more frequently seek love resources than will men Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_{15}$: Men will more frequently seek entertainment service resources than will women</td>
<td>NS</td>
<td>Accept: Sig. p&lt;.001</td>
</tr>
<tr>
<td>$H_{16}$: Men will more frequently seek DEP information resources than will women</td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

NS= No Significant Difference; DEP= Demographic, Ethnic, and/or Personality
With regard to her method, two independent, trained coders were used to code each ad according to the resource categories outlined above, with discrepancies being resolved by a third research assistant, and the primary investigator. An ANOVA procedure confirmed that there was no significant difference between the two cities in any regard, and the ads from the two magazines were then grouped together for further analysis, involving a series of ANOVAs to test the 16 hypotheses she formulated.

Hirschman’s (1987) hypotheses are summarized in table 1 below, as are her results and our own results from the corroborating study. Hirschman’s main significant findings were that: men more frequently sought physical attractiveness resources than women; that women more frequently offered physical attractiveness resources than did men; that women more frequently sought money resources than men; and that men more frequently offered money resources than women. One of her hypotheses proved significant, but was reversed: H13, in which women would more frequently offer demographic, ethnic and classification information resources than would men, resulted in an opposite finding.

Hirschman’s (1987) paper has been cited by a great deal of other work that has examined gender roles and partner seeking, including Fischer and Arnold (1990); Smith, Waldorf and Trembath (1990); Belk and Coon (1993); Toma, Hancock and Ellison (2008); Hancock and Toma (2009); Toma and Hancock (2010); Greenlees and McGrew (1994); Heino, Ellison, and Gibbs (2010); and, Wiederman (1993). However as far as we are aware, no scholars have replicated or corroborated her work. Murgolo-Poore et al. (2002) outlined a research agenda for exploring heterosexual partner seeking in line with Hirschman’s (1987) study in an age of digital media and with new alternatives to manual content analysis. In another paper, Murgolo-Poore, Pitt and Berthon (2003) suggested additional theories or conceptual frameworks, namely feminist theory and evolutionary psychology, that could be used to shed light on the kinds of findings that might result from future work on partner seeking in different settings. In the next section, we describe our study, which sought to corroborate Hirschman’s (1987) findings on the heterosexual partner seeking problem, in a different context, using additional methodologies, and bringing fresh theoretical perspectives.

3. People as Products in the Age of Online Dating

Since Hirschman (1987) conducted her magazine-based research in the mid-1980s, the context of media-directed partner-seeking has changed fundamentally. In the developed world, it is becoming hard enough to find magazines and newspapers, let alone printed media that offers personals ads in which people can seek partners. Partner-seeking has moved online and occurs on a plethora of websites such as eHarmony, OKCupid, Elitesingles and Match.com, and apps such as Tinder, Bumble, Zoosk and Grindr. This has profoundly changed the way in which partner seekers can communicate with each other. The revenue models of printed media involved charging for the space taken by the advertiser. Seekers in print ads paid for the placement in “single column inches,” or the space that their message took up on a page and were typically restricted in the number of words that they could use to declare what they offered and sought. Most newspapers and magazines either did not permit partner seekers to post photographs of themselves or charged excessively for this if they did. The medium permitted less frequent and less obvious communication: people had to wait for a new printed issue to appear, make sure they kept it, and then communicate
indirectly with the target partner either through an anonymous letter mailbox, or in some cases a telephone number.

The revenue models of online dating platforms vary from free placements (funded by click-through advertising), to one-off membership, to subscription models. Most online dating platforms generally do not restrict subscribers to the same space restraints as described above for print media. So, partner seekers can generally use as many words as they like to declare what they offer and seek. They can also place photographs of themselves, and depending on the service, users can contact each other via phone, email, text message, or directly through messages on the website or app being used.

Obvious questions concerning partner seeking that arise from these developments include: Does the nature of the medium change what users offer and seek in any way? Has the lapse of time – more than thirty years after the publication of Hirschman’s (1987) work – changed what males and females offer and seek? For example, there have been changes in legislation (equal opportunity and affirmative action) that has in many ways levelled the playing field for females, so that they may no longer need to seek money and status in male partners. These changes may also be mirrored in culture and values, so that females not only no longer seek money and status in male partners, they might also not feel the need to describe their physical attributes to the same extent. In order to shed light on these, and other issues, we conducted a corroborative study that is described in the next section.

3.1 Corroborative Study Methodology

This study aimed to collect a sample of 1000 male and 1000 female ads from the online dating website Match.com. In order to replicate Hirschman’s (1987) original study, an attempt was made to split these ads equally to include ads from seekers in New York (NY) and Washington DC (DC) that had been placed in the two months prior to the commencement of the study. In the case of males in NY, an initial sample of 500 was obtained; in the case of DC an initial sample of 482 males was obtained. In the case of females in NY, an initial sample of 490 was obtained; in the case of DC an initial sample of 451 was obtained. The ads were then subjected to a screening procedure to ensure that there was sufficiently clear text to code and analyze, as a result of which 14 and 20 male ads were eliminated in NY and DC respectively, and 26 and 27 female ads were eliminated in NY and DC respectively. This resulted in a final sample of 1842 usable ads (954 males, 51.8%, and 888 females, 48.2%). Two coders (one male, one female) were trained to code all the ads according to the resource categories in Hirschman’s (1987) study (definitions described above). The coders then conferred with each other on cases of disagreement (in 278 cases), and where agreement could not be reached (in 57 cases), one of the authors stepped in and made a final decision.
3.2 Corroborative Study Results
A series of ANOVAs was then conducted on the data to test the same hypotheses proposed by Hirschman (1987) in her original study. The results of these are reported in simple fashion in Table 1 above. As can be seen from the table, first, our results concur with seven of the non-significant results of the original study (H₄, H₅, H₆, H₈, H₉, H₁₂, and H₁₆). Second, our results also concur with the original study by accepting H₂, that females will more frequently offer physical attractiveness resources than will males; and also, H₃, that females will more frequently seek money resources than will males. Third, our results do not concur with the original study on hypotheses that Hirschman (1987) found significant: H₇, that males will more frequently offer money resources than will females, and the reversed H₁₃, that females will more frequently offer demographic, ethnic, and/or personality (DEP) resources than will males. Fourth, our results accepted two hypotheses postulated that the original study found not to be significant: H₁₁, that males will more frequently offer money resources than will females, and H₁₅, that males will more frequently seek entertainment services than will females. Finally, our study also rejected three hypotheses that the original study either confirmed or found insignificant: H₁: Females, as opposed to males (significant) in the original study, significantly more frequently seek physical attractiveness resources than will males. H₁₀, females (as opposed to males posited but found insignificant) significantly more frequently offer intellectual status resources than will males. H₁₄, females (as opposed to males posited but found insignificant) significantly more frequently seek love resources than will males.

3.3 Corroborative Study Discussion
The results prompt a number of observations and questions. The observations are first, that females not only offer more in terms of physical attractiveness resources than males, but unlike their counterparts of the 1980s, they also seek them more. Second, while females still seek money resources more frequently than do males, males no longer offer these resources more frequently. Third, females now offer significantly more intellectual status resources than males, unlike their counterparts in the 1980s. Fourth, nowadays, females both offer and seek significantly more love resources than do males. Finally, males now more frequently seek significantly more entertainment service resources than do females.

The questions raised by these results are compelling. First, have society and culture changed so significantly that appearances now matter more to females than to males? Second, in a similar vein, while females still seek significantly more money resources, males no longer offer these; but, why would males need to when they now offer significantly more intellectual resources, and at least legally in most cases, should be earning equal remuneration? Third, why do females now both offer and seek significantly more love resources than do males? Fourth, if culture and society do not account for these changes, is it perhaps the nature of the medium (online dating websites rather than newsprint) that does? When individuals are allowed to include pictures as well as many more words (than in the 1980s) to express their resources, does it change the nature of what they offer and seek?

Might the changes that we observe merely be an artifact of the specific medium used here – the structure and the requirements of the website, Match.com? Match.com actually requires participants to disclose certain data that they might otherwise not have disclosed, certainly not in the era of
print media personal ads. We strongly suspect that this requirement may have shaped the results obtained. The service requires participants to disclose demographic and ethnic information, religious views, education obtained, salary/annual earnings and certain physical attributes (e.g. height, body type) and then also asks seekers to be quite specific in disclosing what they might be searching for in a potential partner. This is done in the form of a questionnaire, and then the user can also write more about themselves in a free form essay, in which they can disclose further about themselves and what they would be looking for in a partner. The point is, some users might feel that they have already disclosed enough information about themselves in the required questionnaire section and not feel it necessary to repeat this in the free form part of the disclosure. The text used in our analysis is only taken from the free form part of the individual’s submission. We omitted to use the information from the questionnaire section because it was required of the user and would not have constituted information voluntarily disclosed.

Thus, in a very real sense, when it comes to modern dating, the medium has become the message (McLuhan & Fiore, 1967). The medium has changed the messages that individuals broadcast to the extent that previous theories and methods might not do as good a job of explaining the problem as well as they used to do, because the context has changed so much. We have therefore resorted to new theories and methods, and these are described and discussed in the next section.

Figure 3: An Extension of Hirschman’s (1987) Study on the REG Framework

4. Partner Seeking in Online Environments: An Extension

Considering the complexity of research in the social sciences, the concept of replication can be thought of in a broader sense to encompass research that aims to test the same hypotheses by using different populations, different measurements or different techniques of data analysis (Tsang & Kwan, 1999). Indeed, the REG framework allows researchers to extend an original research study by changing one or more of
the parameters of the research space to further explore a research question and gain additional insights from the data. In order to further explore the partner-seeking data gathered from Match.com, we used the REG framework to extend Hirschman’s original research problem. Our approach is summarized in the diagram in figure 3. In our extension study, automated text analysis was used as the method of analysis and the theoretical backdrop of Pennebaker and colleagues (c.f., Pennebaker, Mehl & Niederhoffer, 2003; Pennebaker et al., 2015) was applied to the Match.com data. In the following subsections, we describe the theory from linguistic psychology and the automated text analysis tool that was used. Then, we discuss the results of the extension.

4.1 Insights from Linguistic Psychology

The psychologists Pennebaker and Francis (1996) began their work on language and human behavior by attempting to discover which features of writing about negative life experiences by individuals could predict subsequent health improvements. Pennebaker and his colleagues have since shown that the words people use to express their thoughts and ideas, and to communicate in everyday life, say a lot about their psychological and social worlds, as well as their social status, motives, and even gender and age (Pennebaker, Mehl & Niederhoffer, 2003). Pennebaker’s work contends that the corpus of text created by a writer or a speaker can reveal four main dimensions of that person’s behavior, namely analytical thinking, clout, authenticity and tone. These are described in more detail below.

Analytical thinking: This dimension captures the degree to which people use words that suggest formal, logical, and hierarchical thinking patterns (Pennebaker et al., 2014). This can be calculated as an index of the number of articles, prepositions, personal pronouns, impersonal pronouns, auxiliary verbs, adverbs, conjunctions and negations in text in relation to the entire corpus, which Pennebaker et al. (2014) also refer to as function words. These authors have, for example, established that students who used a higher proportion of function words (such as greater article and preposition use and referenced complexly organized objects and concepts) in their college application essays scored higher grades. This is contrasted with students who achieved lower grades, who used more dynamic language (i.e., personal narratives) in their essays.

Clout: This dimension refers to the relative social status, confidence, or leadership that people display through their writing or talking. The algorithm was developed based on the results from a series of studies where people were interacting with one another (Kacewicz et al., 2014). These authors found that people with higher status consistently used fewer first-person singular (“I”), and more first-person plural (“we”) and second-person (“you”) singular pronouns. Furthermore, the research found that status is associated with attentional biases, such that higher rank is linked with other-focus whereas lower rank is linked with self-focus. In simple terms, someone with a higher clout score would be more likely to focus on others than someone with a lower clout score, who would be more likely to focus on themselves.

Authenticity: When people reveal themselves in an authentic or honest way, they are more personal, humble, and vulnerable. The algorithm for authenticity was derived from a series of studies where people were induced to be honest or deceptive (Newman et al., 2003), as well as a summary of deception studies published in the years afterwards (Pennebaker, 2011). The latter author refers to the differences between formal and
informal writing. The former, he argues, “often appears stiff, sometimes humourless, with a touch of arrogance. It includes high rates of articles and prepositions but very few I-words…” (p. 44). Among the characteristics that those who write more formally display is a tendency to be less honest. Thus, those who score highly on authenticity tend to be more personable, humble and truthful.

Tone: This dimension combines scores for words expressing positive emotions and scores for words expressing negative emotion into a single summary variable, so that the higher the number, the more positive the tone (Cohn, Mehl, & Pennebaker, 2004). This is in some ways akin to the sentiment variable (e.g., Turney, 2002) commonly used in content analysis of social media textual data nowadays.

4.2 Extension Study Method

Whereas the study that this work corroborates was conducted in the era of print media, the advent of the internet has caused massive volumes of textual data to be produced. The sheer volume and velocity with which this data is produced today and are available to marketing scholars, makes manual content analysis difficult and time consuming at best, as we experienced in testing Hirschman’s (1987) original hypotheses. As Humphreys and Wang (2017, p. 1274) point out, “researchers, consumers, and marketers swim in a sea of language, and more and more of that language is recorded in the form of text.” While qualitative language scholars might contend that language can only be studied in context, others (e.g., Popping, 2000; Smith, 1992; Weber, 1994; West, 2001) have countered that the features of language and words can at least be counted, and therefore statistically analyzed.

In order to measure the extent to which the dimensions theorized from their research (and referred to above) manifested in a corpus of text, Pennebaker and his colleagues (Pennebaker et al., 2001) developed content analysis software called LIWC (Linguistic Inquiry and Word Count). The tool has been used to analyze text in sources as varied as classical literature, personal narratives, press conferences, and transcripts of everyday conversations (Pennebaker & Graybeal, 2001) and more recently in marketing specifically, for example, customer-firm interactions (Packard, Moore & McFerran, 2018).

The LIWC software is actually quite simple in concept, and to use - it reads a piece of text and counts the percentage of words that reflect different emotions, thinking styles, social concerns, parts of speech, and even punctuation if required. LIWC then compares each word in the text against a user-defined dictionary and the dictionary identifies which words are associated with which psychologically-relevant categories. The software calculates the percentage of total words that match each of the dictionary categories, and the researcher can use this data for subsequent statistical analysis. At the heart of the program is a group of dictionaries that tell the text analysis module which words to identify and classify (the master dictionary is composed of almost 6,400 words, word stems, and even selected emoticons).

For the purposes of this part of the study, we focused on the four summary variables or dimensions referred to above, namely, analytical thinking, clout, authenticity, and emotional tone. Each of the summary variables are algorithms made from different LIWC variables based on previous language research (see Pennebaker et al., 2015). The numbers are standardized scores that have been converted to percentiles (based on the area under a normal curve) ranging from 0 to 100. So, for example, tone
is scored on a 100-point scale, with any score under 50 viewed as a more negative emotional tone. We also used LIWC to count the total number of words used by each male or female user of Match.com in the sample.

4.3 Extension Study Results

The documents containing the text from each user’s profile on the Match.com website was individually analyzed using LIWC. The differences between males and females on the dimensions of authority, clout, authenticity and tone, as well as total word count were compared using ANOVA on JMP statistical software. The results are reported in table 2 below including the size of effect of gender (see Cohen’s d).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Male Mean</th>
<th>Female Mean</th>
<th>F (1, 1840)</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Count</td>
<td>390.12</td>
<td>416.03</td>
<td>13.57</td>
<td>&lt; 0.001</td>
<td>0.172</td>
</tr>
<tr>
<td>Analytic</td>
<td>62.63</td>
<td>62.75</td>
<td>0.048</td>
<td>0.826</td>
<td>N.S.</td>
</tr>
<tr>
<td>Clout</td>
<td>47.21</td>
<td>50.04</td>
<td>29.08</td>
<td>&lt; 0.001</td>
<td>0.252</td>
</tr>
<tr>
<td>Authentic</td>
<td>33.40</td>
<td>37.82</td>
<td>30.69</td>
<td>&lt; 0.001</td>
<td>0.258</td>
</tr>
<tr>
<td>Tone</td>
<td>92.00</td>
<td>94.32</td>
<td>35.98</td>
<td>&lt; 0.001</td>
<td>0.300</td>
</tr>
</tbody>
</table>

Females in our sample used significantly more words and with significantly more clout and authenticity in their partner-seeking posts than males. Moreover, females were significantly more optimistic and positive than males in their emotional tone. The only LIWC dimension on which there was no significant difference between the genders was that of analytic language.

4.4. Extension Study Discussion

The results of the corroborative study revealed that some aspects of partner seeking have changed over thirty years, while others have remained constant. The questions that arise from this are primarily whether the passage of time (with its concomitant changes in society and culture) accounts for this, or whether these changes are due to the new context, or perhaps, both. Whether the results of the first study contribute to social exchange theory is open to debate. At its most fundamental level, social exchange theory, based in the work of Homans (1961) argued simply that we give in order to receive. A party seeks a resource from another (for example, males will more frequently seek physical attractiveness, H₁ in Hirschman’s original 1987 work, and in return the other party, knowing this, will offer it more significantly, H₂ in the original study). In basing her original work on this theory, Hirschman (1987) acknowledged it was difficult to operationalize exchange concepts in an empirical setting, and that the neatly organized but somewhat abstract categories of resource exchange theory always required further interpretation. In her attempt to use a real (as opposed to abstract) situation, she argued that it was important to “delineate the specific setting or context within which the exchange will occur and define the parties to the exchange” (p. 106). She then goes on to discuss the limitations of exchange theory, including instrumentality, and the fact that it discounts what Belk and Coon (1993) later referred to as “agapic giving,” or acts of generosity and altruism with no expectation of returns.

Our second, broader, extension of the original study therefore also changed the theoretical lens from exchange theory to frameworks from linguistic psychology, and
the method from manual content analysis to automatic text analysis. In this case, more striking differences between males and females became apparent. Females used more words in their online posts. Moreover, they spoke with more clout, which can be interpreted to mean that they spoke with more confidence than males. This also suggests that they referred to themselves less often (fewer first-person singular “I” used), and more to the party they were seeking (more second-person “you” used), or to themselves and the other party as a couple or pair (more first-person plural “we” used). It would also appear that females are more other-focused than males, who seem to be more self-centered according to our analysis.

Females also exhibited significantly more authenticity in their posts, which suggest that they are probably more honest in what they are saying, and also more personal, and humbler. Overall, males might be coming across as more formal, humourless and arrogant. While both males and females were very positive in their tone in the posting of their ads, females were significantly more so.

5. Research Limitations, Managerial Relevance, and Avenues for Future Research

The studies presented here are not without limitations. The context used in this paper, Match.com, is only one of many online dating websites, some of which have different objectives, including serious partner seeking, casual dating, and friendships. Other results might have been obtained if different websites were used for source material. Match.com also requires a paid membership, which might deter some partner-seekers, who would then resort to free websites such as Plenty of Fish, which is funded by advertising rather than subscriptions and might attract a different user profile that might produce different results. Match.com also requires members to complete a questionnaire that asks them specifically to divulge particular information about themselves, and this to some extent, shapes what they then say or don’t say in the free text that they can complete. Finally, this paper focused on data from two major metropolitan regions in the US, and one cannot say that results from those users would not be different from those in other regions (e.g., smaller cities, different states, rural), or indeed other countries.

It is unlikely Hirschman (1987) focused her work on being relevant to managers; rather, her aim was to advance theory. However, we contend that the findings of our research do in fact have managerial and personal relevance. First, there has been an upturn in interest in the phenomenon of human branding (see Fournier & Eckhardt, 2019, Moulard, Garrity, & Rice, 2015; Moulard et al., 2014; Close, Moulard, & Monroe, 2012), with marketing journals even devoting entire special issues to the topic (e.g., Moulard & Pounders, 2019). While human branding has previously tended to focus on the branding of the rich and famous including sport heroes, movie stars, and media personalities, nowadays, social media such as LinkedIn and Instagram provide platforms for ordinary individuals to brand, promote, and market themselves. The findings of this research suggest that the words chosen to do this can have a significant impact on the success or otherwise of these human branding and influencing efforts. Second, and more broadly, the techniques used in this research reinforce to managers the effective use of automated text analysis tools (see Humphreys & Wang, 2017) to understand and gain value from the wealth of free data available online. Third, there are similar types of interpersonal exchanges to partner seeking that marketers and managers encounter frequently and would be interested in. For example, organizations compose and publish job descriptions and candidates...
submit written applications for these positions. Content analysis of these documents can shed light on the key factors that are important for effective job descriptions, as well as the characteristics of excellent and less successful applications. Nowadays, job review websites such as Glassdoor.com provide an excellent source of textual data that can elucidate the nature of employee brand engagement (see Pitt et al., 2019).

Using the REG framework suggests a number of worthwhile avenues for future research. First, the problem itself (heterosexual partner seeking) can be expanded. It would be insightful to explore partner-seeking, for example, in same sex relationships, or in cultures where marriages are arranged, either by other family members or by brokers. Second, the contexts in which the kind of partner seeking that occurs on Match.com, could be expanded and explored. For example, if there are websites that afford partner seeking services where no predefined questionnaires are required, or where partner seeking is done on smartphone apps such as Tinder, these might provide different perspectives. Third, other theoretical frameworks can be employed as lenses in this type of research. Whereas the work described here was based in resource exchange theory and linguistic psychology, Murgolo-Poore, Pitt and Berthon (2003) suggest, but do not test, work in feminist theory and evolutionary psychology as effective theoretical backdrops against which to explore partner seeking behaviour. Fourth, a host of other methodologies could be employed. In the specific area of automated text analysis, there are dictionary-based tools such as DICTION (Hart, 1984; 2008), which use different dimensions along which to make comparisons. Leximancer (e.g. Campbell, et al., 2011) allows the user to produce map diagrams of bodies of text that enable graphic comparisons and visual interpretations to be made. More recently, artificial intelligence services such as IBM’s Watson can infer variables such as the writer’s personality, values and expressed emotions and sentiment from text.

6. Conclusion

This paper has replicated, corroborated, and extended a classic study on the fundamental marketing exchange manifested in human partner seeking. It has done so through the lens of a framework designed to allow researchers to replicate and extend existing work, as well as generate new insights from previous work. Reiterating that in the social sciences there cannot be a perfect replication due to the passage of time, this paper has, while keeping the problem constant, explored the application of new theories and new methodologies in a new context.

Replications and corroborations are important, but they are also interesting. Replicability is critical in the pure sciences because if results cannot be replicated, the original research is obviously flawed. The social sciences are different. An inability to replicate original results does not mean that the original research was flawed. It might have been; however, the passage of time might have altered the context in such a way that the results of the replication are different. It is also possible that new methodologies are shedding new light or perhaps different light on an old problem. The continual development of new and sometimes different theories also makes the exploration of problems in the social sciences an intriguing field of scientific endeavour.

While replicability and corroboration are also critical in the social sciences, far less attention is given to them both by researchers and scholarly journals. Studies that replicate and corroborate are also surprisingly fascinating and by extending original work either by bringing in different contexts,
testing new theories or trying out new methodologies, researchers can add to existing knowledge and answer the question so often posed by editors and reviewers of journals: “Is it interesting?”

Reference List


