

Understanding Self-Effects in Social Media

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Abstract

The aim of this article is to improve understanding of self-effects in social media, and to compare self-effects with reception effects. Self-effects are the effects of messages the cognitions, emotions, attitudes, and behaviors of the message creators/senders themselves. Four theories have tried to explain self-effects in offline environments: self-persuasion, self-concept change, expressive writing, and political deliberation. The article reviews research into online self-effects that evolved from each of these theories, and argues why self-effects may be stronger online than offline. Based on this review, a model is introduced that helps explain how online self- and reception effects may coalesce and amplify each other. The article ends by presenting some suggestions for future research.

Understanding Self-Effects in Social Media

Over the past few decades, communication scholars have developed an impressive number of theories, which can generally be classified into three broad clusters. Mass communication theories, which arose in the 1920s in response to new opportunities to reach large audiences via the mass media, aim to understand the cognitive, emotional, attitudinal, and behavioral effects of mass communication on individuals or collectivities. Interpersonal communication theories, which emerged in the 1960s, generally strive to understand the reciprocal communication processes between or within individuals, relationships, or groups. And finally, computer-mediated communication (CMC) theories, which arose in the 1970s, try to explain how computer-mediated communication differs from comparable offline communication and how individuals accommodate to different forms of CMC.

Each of these clusters of communication theories has addressed a broad range of communication questions. For example, many theories have devoted attention to the effects of different types of messages on recipients. Others have focused on the individual differences and situational factors that influence senders' creation of messages. And yet others have focused on the dynamic give-and-take interactions between senders and recipients, in either face-to-face or CMC settings. But despite this conceptual broadness, few communication theories have conceptualized how creating or sending messages for the purpose of communicating to others may affect oneself (Pingree, 2007; Shah, 2016; Shah et al., this issue). It is only in recent years that there has been a glimmer of recognition within each of the clusters about what can be named self-effects: the effects of messages on the cognitions (knowledge or beliefs), emotions, attitudes, and behavior of the message creators/senders themselves. It has been recognized, for example, that when an individual tries to persuade her friend or when she describes herself in a blog to emphasize a certain trait or quality, the creation of these messages may not only affect the cognition, emotions, attitudes, and behaviors of her friend and followers, but also those of herself (Aronson, 1999; Pingree, 2007).

Yet, despite this growing attention to self-effects among communication scholars, as Reardon and Rogers (1988) foretold nearly three decades ago, communication research often arises more or

less in isolation within different subdisciplines of communication, and this also holds for the study of self-effects. Bringing the dispersed research on self-effects together is important for two reasons.

First, it allows us to see what seems to be commonly understood across the clusters, and what questions must be resolved to have an integrated and robust understanding of self-effects. Second, for reasons I will explain later on, various affordances of social media may make self-effects more frequent, more influential, or more likely to be a part of the communication processes than in similar offline settings.

The aim of this article is to better understand self-effects in social media, and to compare them with reception effects (i.e., the effects of *others'* messages on the cognitions, emotions, attitudes, and behavior of recipients). The remainder of this article begins with a discussion of four paradigms that have tried to explain self-effects in offline environments, and that have inspired research into online self-effects. Then I argue why self-effects are more likely to occur online than offline. Based on this review, a model is introduced that may help explain how self- and reception effects coalesce in online environments. The article ends by presenting some suggestions for future research.

Off- and Online Self-Effects: Paradigms and Empirical Evidence

Research into offline self-effects is not new. In the past decades, four different theories that have helped understand offline self-effects have also stimulated research into online self-effects: self-persuasion, self-concept change, expressive writing, and political deliberation theories. These theories all focus on the same phenomenon, that is, how message creators/senders involuntarily influence their own cognitions, emotions, attitudes, or behavior, but each of them uses different nomenclature to describe this phenomenon. In this article, I prefer to use the term “self-effects” because this term best denotes the effects on the message creator/sender him- or herself.

Self-Persuasion Theories

Self-persuasion can be defined as a phenomenon in which individuals are motivated to persuade themselves to change their own beliefs, attitudes, or behavior (Aronson, 1999). The self-persuasion concept originates from early studies into role-playing. For example, in a classic study by Elms (1966), individuals who were assigned to play the role of trying to convince a friend stop

smoking later reported more negative attitudes towards smoking than individuals who had just listened to the same information. Self-persuasion may even occur when individuals are asked to advocate a position with which they do not agree themselves. For example, Janis and King (1954) demonstrated that participants who convey a counter-attitudinal point of view are more likely to be persuaded by their own than by others' arguments that favor this counter-attitudinal position.

Advocating counter-attitudinal attitudes has most frequently been explained by cognitive dissonance, an uncomfortable internal state that may induce people to change their beliefs and attitudes if these are inconsistent with their overt behavior. Whether counter-attitudinal advocacy effects occur seem to depend on the extent to which the cognitive dissonance may be attributed to external justifications (e.g., rewards). For example, Festinger and Carlsmith (1959) induced subjects to do a boring task and then asked them to indicate how enjoyable it was. Some of them were paid \$1 to do so, others were paid \$20. Afterwards, the subjects who had been paid \$1 rated the boring task as significantly more enjoyable than those who were paid \$20.

Although self-persuasion is a promising paradigm to investigate online self-effects, only two communication studies have investigated online self-persuasion. In one experiment, subjects who were induced to act unfriendly towards an online partner later reported more unattractive perceptions of the partner and more negative attitudes towards the object they discussed (Walther, Van Der Heide, Tong, Carr, & Atkin, 2010). Another experiment explored the effects of two roles in a role-playing videogame on participants' attitudes toward Israelis and Palestinians. Participants were randomly assigned to portray either an Israeli or a Palestinian leader. As expected, subjects who were assigned to the Palestinian or to the Israeli leader showed greater role-congruent attitude changes towards Israelis and Palestinians (Alhabash & Wise, 2015).

Theories of Self-Concept Change

A second type of theories that has fueled research into online self-effects are theories of self-concept change. Like self-persuasion theory, self-concept change theories focus on cognitive and attitudinal self-effects, but these beliefs and attitudes are not towards issues (e.g., smoking) but towards the self. Self-concept is the collection of beliefs and attitudes of an individual about him or

herself. Like self-persuasion theories, theories of self-concept change have largely evolved from the role-playing paradigm. In experiments on self-concept change, subjects are typically induced to present themselves in a particular way, and then their subsequent self-concept reports show that they come to regard themselves as having the traits implied by their self-presentations. For example, in one experiment by Tice (1992), subjects were asked to portray themselves as either introverted or extraverted, regardless of the degree to which they actually possessed the trait. Afterwards, their self-reports of introversion/extraversion were significantly affected by their self-presentations. Several other experiments have demonstrated that individuals' self-presentations can subsequently change their beliefs and attitudes about their selves (e.g., Fazio, Effrein, & Falender, 1981).

Several intrapersonal mechanisms may explain why individuals internalize their self-presentations, particularly self-perception, biased scanning, and public commitment. Self-perception theory (Bem, 1972) posits that individuals infer their self-concepts from retrospectively observing their own overt behavior. In contrast to the common belief that one's self-concept precedes one's behavior, self-perception theory argues that individuals derive their self-concepts from their prior behavior. Biased scanning theory posits that our self-concept consists of a complex set of sub-conceptions. During self-presentations, individuals scan their memories for sub-conceptions that are compatible with their overt behavior. By doing so, a selective set of sub-conceptions may become salient in memory. These temporarily accessible sub-conceptions could lead to a biased view of the self and, in time, to a self-concept shift (Jones, Rhodewalt, Berglas, & Skelton, 1981).

Several other authors have emphasized the central role of imagined audiences in the formation of our self-concepts (e.g., Schlenker, Wowra, Johnson, & Miller, 2008). Imagined audiences are the (groups of) people whom we mentally envision during our self-presentations. An imagined audience may be just as influential for self-concept changes as actual audiences are (Schlenker et al., 2008). Indeed, a number of experiments have shown that subjects' self-concept reports are more affected after they are led to believe that their self-presentations are public than private (e.g., Kelly & Rodriguez, 2006), a difference that is explained by public commitment. According to Tice (1992), private behavior can easily be discounted or forgotten, whereas public

behavior leads to commitment, firstly because other people know about it, and secondly because individuals don't like to appear inconsistent in their public self-presentations.

A series of studies has established self-effects in online environments. Like their offline counterparts, some of these studies have shown that online self-effects are greater when the online self-presentation is public rather than private (Gonzales & Hancock, 2008). Others have demonstrated that online self-effects are amplified by confirmatory feedback from others (Carr & Foreman, 2016; Walther et al., 2011). Moreover, online self-effects are greater when this feedback is public rather than private, and when it comes from close relationships rather than strangers (Carr & Foreman, 2016).

The Expressive Writing Paradigm

A third theory that has conceptualized self-effects and inspired research into online self-effects is Pennebaker's (1997) writing paradigm. In this paradigm, subjects typically get the assignment to write for a designated period about their deepest thoughts and feelings regarding an emotional event. Afterwards, they are asked to put their writings in a box and are promised that these writings will not be linked to their name. Over the years, dozens of studies have found that expressive writing may lead to improved health and well-being (Pennebaker & Chung, 2011). The beneficial results of expressive writing are similar to the results of talking to a tape recorder or to a therapist (for a review, see Pennebaker & Chung, 2011), and similar for participants whose writings are kept private or openly handed to an experimenter (Czajka, 1987).

The writing paradigm differs from the two previously discussed theories in several ways. Both self-persuasion and self-concept change theories postulate that individuals internalize their self-presentations, such that their beliefs and attitudes are adjusted in the direction of their self-presentations. Whereas self-effects in both these theories involve a directional change in self-concept, beliefs, and/or attitudes, in the writing paradigm they primarily pertain to unidirectional changes in knowledge and emotions (e.g., well-being). The explanations for self-effects due to expressive writing also differ from those proposed in self-persuasion and self-concept change theories. It has been suggested, for example, that expressive writing may force individuals to re-evaluate their life

circumstances, label and acknowledge their emotions, or change the representations of certain emotional events in their brain (for a review, see Pennebaker & Chung, 2011).

Several studies into online self-effects based on the writing paradigm have found that expressive blogging leads to higher perceived support (Baker & Moore, 2008), higher subjective well-being (Ko & Kuo, 2009), and higher self-esteem (Schmitt, Dayanim, & Matthias, 2008). In addition, using an expressive writing app in Facebook can alleviate depressive symptoms (Lee et al., 2016). And it has been shown that the beneficial effects of expressive postings are larger on the posters themselves (i.e., self-effects) when compared to the effects of exposure of these posters to *others'* supportive postings (reception effects; Han et al., 2011). Finally, the effects of exposure to *others'* supportive messages on well-being (reception effect) is enhanced by the effects of online supportive message posting (self-effect; Han et al., 2011).

Political Deliberation

A fourth and final theory that has inspired research into online self-effects is political deliberation theory. Political deliberation is a democratic group decision-making process that emphasizes the use of logic and reason to weigh different options. Although deliberation theory is basically a communication theory, its complex group dynamics cannot be easily understood from a reception effects perspective (Pingree, 2007). As one of the first communication scholars who conceptualized self-effects in political communication, Pingree distinguishes between three different self-effects. Expectation effects are self-effects that occur as a consequence of the anticipation of future communication or expressive acts. They happen to an individual's cognitions, attitudes, emotions, and behaviors when s/he considers a future expressive act (e.g., a blog) or commenting to another person. Composition effects are self-effects due to the composition of messages. They refer to the changes to the message creator that occur as s/he constructs a message and considers how to communicate it. Finally, release effects are the cognitive, attitudinal, emotional, and behavioral self-effects that occur after the message is sent to others. Pingree suggests that expectation and composition effects are governed by self-perception processes, and release effects are governed by both self-perception and public commitment dynamics.

Several studies in political communication have revealed cognitive, attitudinal and behavioral self-effects. For example, Price, Nir, and Cappella (2006) found that expression of arguments and opinions mediated the relationship between individuals' exposure to online group discussions and their political attitudes. Several subsequent studies have found that posting political messages acts as a mediator between online news consumption and political engagement or participation (for a review see Shah, 2016).

Together, the four theories have conceptualized cognitive (knowledge or beliefs), emotional, attitudinal, and behavioral self-effects that may occur before, during, and after message creation/sending. In addition, these self-effects may be enhanced by reception effects, such as confirmatory feedback (Walther et al., 2011) and emotional support from others (Han et al., 2011). Finally, reception effects (i.e., the effects of exposure to *others'* messages) are enhanced by self-effects (i.e., the effects of online supportive message posting; Han et al., 2011)

Online Self-Effects and the Affordances of Social Media

A number of factors may independently and conjointly affect the prevalence and potency of self-effects in social media. Firstly, in social media there is a massive exchange of information that Castells (2007) has named "mass self-communication." Like mass communication, mass self-communication can potentially reach a global audience, but it typically focuses on personal, self-related information. It has indeed been found that individuals generally disclose more personal information via social media than they do in offline settings (e.g., Christofides, Muise, & Desmarais, 2009). Sharing personal, self-related information may more easily lead to self-effects than sharing non-personal information, firstly because it is more likely to lead to internalization (through self-perception, biased scanning, or public commitment), and secondly because it more readily invites feedback or support from others, which may reinforce self-effects (e.g., Han et al., 2011).

Another reason why self-effects may be more potent online has to do with the affordances of social media that may further encourage self-effects, most notably their scalability, asynchronicity, and cue-manageability (boyd, 2011). Scalability offers message senders the ability to articulate self-related messages to any size and nature of audiences. It thus provides message senders with ample

forums to commit themselves to imagined audiences, which may, in turn, enhance the public commitment aspect of self-effects. Moreover, by broadcasting self-related messages to sizeable audiences, message creators/senders are more likely to receive self-related feedback from these expanded audiences, an experience unknown to traditional interpersonal communication settings. As discussed, both public commitment and self-related feedback may amplify self-effects.

Asynchronicity offers users the possibility to communicate when it suits them, in real time (synchronously) or delayed (asynchronously). Asynchronous communication allows users to carefully craft, refine, and optimize their public self-presentations (Walther, 1996), and while doing so, they might internalize these optimized self-presentations. In addition, cue-manageability offers users the possibility to manage the non-verbal (auditory and visual) cues about the self during their online self-presentations, which, like asynchronicity, may lead them to present more selectively constructed versions of their self than would be possible in offline settings. Similar to asynchronicity, cue-manageability may stimulate the intrapersonal mechanisms (self-perception, biased scanning, public commitment) that have been shown to result in self-effects.

A final reason why online self-effects may differ from their offline versions is that social media users may encounter more messages with “communicatory utility” than in comparable offline settings, which may amplify expectation self-effects (i.e., self-effects due to the anticipation of future discussion; Pingree, 2007). Communicatory utility refers to the anticipated usefulness of existing messages that one encounters in terms of their prospective importance for future discussions with friends and relatives (Atkin, 1972). If the communicatory utility of a message is high, prospective message creators/senders may pay more attention to it or process it more elaborately (Pingree, 2007). They may relate it to preexisting knowledge and beliefs about the issue at hand, and form their beliefs and attitudes on both message-related and message-unrelated information (Petty & Cacioppo, 1986). In social media, the likelihood of finding messages with communicatory utility may be greater than in offline settings, firstly because such messages are so many, so searchable, and so likely to be customized to an individual’s preferences, and secondly because such messages often appear as part

of a conversational structure (e.g., accompanied by comments) designed to encourage future discussions with friends and relatives.

How Online Self- and Reception Effects Coalesce

Theories and research into online self-effects share two characteristics. First, these studies, and in particular the experimental ones, have primarily investigated self-effects within message senders/creators who are isolated from the reciprocal interactions that characterize most online communication. Second, in the studies that do recognize these reciprocal interactions, self-effects have mostly been investigated as a phenomenon that follows from mass media exposure. For example, in several studies based on the O-S-R-O-R (Orientation-Stimulus-Reasoning-Orientation-Response) model, self-effects are seen as an important mediator between mass media exposure and changes in political attitudes or behaviors (e.g., Shah et al., 2007).

However, in social media, participants are potential senders of both interpersonal and mass communication messages, and they can seamlessly switch between the sender and recipient roles. Social media therefore pose unique opportunities for self-effects, which may not only occur after mass media exposure but at all stages of the dynamic communication process. To discuss this in more detail, the model in Figure 1 may be helpful. As can be seen from the eight ovals in the model, each participant in social media is both a sender and recipient of interpersonal (one-to-one, one-to-few) and mass communication (one-to- ∞) messages. For reasons of parsimony, the model focuses on two individuals, Eve, the sender/recipient in the above left oval, and Mac, the recipient/sender in the above right oval.

Eve is about to post a message on Facebook to reach out to her 700+ friends, in which she shares a news video of a politician's offensive statements about women's roles, together with her comments denouncing his statements and her personal experience with sexual harassment in the far past (see the arrows 1 to ∞ that originate from Eve's oval). As the literature suggests, before, during, and after Eve's message composition and release, several mechanisms (self-perception, biased scanning, public commitment) may induce Eve to adjust her beliefs, emotions, and attitudes towards

the politician, gender issues, and herself. Following Pingree (2007), these self-effects are named composition and release self-effects.

When Mac, the recipient/sender in the above right oval, encounters Eve's message, his negative attitudes towards the politician may strengthen. And he may feel empathy for Eve, or anger towards the politician. When Mac further elaborates on Eve's message, he might relate elements of her message to his own beliefs, attitudes, and experiences regarding the politician and gender issues, which might result in beliefs and attitudes that do not necessarily echo Eve's message. These effects can be conceived of as reception effects: effects due to Mac's exposure to Eve's message (see interpersonal arrow 1 from Eve to Mac). As proposed in communication theories, there are many boundary conditions for reception effects like this one, which, for reasons of parsimony, are left out of this discussion (see Valkenburg, Peter, & Walther, 2016).

However, because Mac is Eve's friend and also a potential sender in the network they share, he is involved, and may wish to, or even feel obliged to, respond to Eve's message. While doing so, he knows that numerous of their shared friends may also react to her message, and because he anticipates future discussion with these friends (i.e., her message is high in communicatory utility), he may more elaborately process Eve's posting than he would do without anticipating such future interaction. While considering a potential response to Eve, he may experience a self-effect due to the anticipation of future discussion in their shared network, which may, in turn stimulate public commitment to his message (see "expectation self-effect"; Figure 1). Although Pingree (2007) conceptualized expectation effects as occurring within message senders, when both creators/senders and recipients are considered, such effects, in essence, can also occur among recipients who anticipate future expressive acts, although as in most dynamic communication settings, it is difficult to identify whether and when Mac is—or perceives himself as—a sender or recipient.

When Mac decides to respond publicly to Eve, his role formally shifts from recipient to sender, and in this role he may experience the same composition and release self-effects as Eve (see Figure 1). When Eve gets feedback from Mac, his feedback may moderate (strengthen or weaken) any self-effects within Eve that may have occurred before, during, or after her message creation/posting.

Therefore, such self-effects can be named “moderated self-effects.” Essentially, Mac’s feedback to Eve prompts a reception effect for Eve (see interpersonal arrow Feedback 1 from Mac to Eve). All in all, in social media, message senders/recipients can experience self-effects in at least two ways, direct via internalization processes (self-perception, biased scanning, public commitment), and indirect via the potentially moderating feedback or support of others. Similarly, message recipient/senders can experience self-effects when they anticipate future interaction and perceive themselves as a potential sender, in which case they can also experience self-effects through internalization. The model shows that, if the broader dynamic communication process is considered, social media users may experience four different self-effects (expectation self-effects, composition self-effects, release self-effects, and moderated self-effects).

Discussion and Suggestions for Future Research

Online self-effects have primarily been investigated within at three communication subdisciplines: mass media, interpersonal, and CMC research. Studies within these subdisciplines have been inspired by four different offline theories (i.e., self-persuasion, self-concept change, expressive writing, and political deliberation). This article is a first attempt to integrate the insights developed within each of these subdisciplines.

Comparing On- and Offline Self-Effects

To date, none of the available communication studies have tested to what extent online self-effects differ from offline self-effects. Interestingly, when the effects sizes found in studies of online self-effects are compared with those of offline self-effects, online self-effects do not seem to be more sizeable than offline ones. For example, the offline experiment of Tice (1992) and the online experiment of Gonzales and Hancock (2008), which both used the same experimental paradigm, revealed no striking differences in the effect sizes of publicness of the self-presentation. Although the literature does not allow decisive conclusions, this suggests that the mechanisms are not so much different for on- and offline self-effects, but that, due to the affordances of social media, online self-effects may just be more likely or common.

Investigating Online Self-Effects to Better Understand Reception Effects

Both the experimental and the correlational studies on online self-effects suggest that self-effects may strengthen reception effects, and that reception effects (e.g., feedback, emotional support) may strengthen self-effects. This interactive nature of self- and reception effects may be promising for future communication research in general and intervention research in particular. After all, decades of mass communication effects research have yielded small and disappointing reception effects that defy common sense because everyday experience offers many anecdotal examples of strong (social) media effects.

These small reception effects have often been attributed to individual differences in message reception. In attempts to further understand these individual differences in message reception, numerous studies have investigated the moderating effects of dispositional, environmental, and situational factors on a host of outcome variables, but often with mixed success (Valkenburg et al., 2016). However, the research in this review suggests that self-effects are stronger than reception effects, and that self-effects may reinforce reception effects. A more systematic focus on self-effects might, therefore, help us to better understand reception effects of (social) media, or at least enhance the explained variance of reception effects. Moreover, it may help us to create more effective interventions to instill individuals or groups with certain desirable beliefs, emotions, attitudes, and behaviors than reception-only interventions are able to do. But to better understand self-effects, we need to know how to measure them and how to disentangle them from recipient effects.

Measuring and Disentangling Self-Effects from Recipient Effects

Self-effects have been measured in experimental paradigms in which certain self-presentations are induced, after which the subject's beliefs and attitudes towards certain issues or the self are assessed. Self-effects have also been assessed in more naturalistic online environments, such as computer-mediated support groups. Han et al. (2011), for example, used a promising method in which they combined elaborate content coding of individual message posts with action log data, which not only enabled them to discern who wrote every message, but also who read it, and responded to it.

Although the experimental and naturalistic studies have used promising methods to assess online self-effects, none of the studies have actually operationalized the mechanisms (e.g., biased scanning) that have been proposed in different theories. To investigate these mechanisms, researchers may need to uncover the intrapersonal communication processes of (potential) message senders/creators, which is a lofty task (e.g., Honeycutt & Ford, 2001). Although physiological measures (e.g., skin conductance, fMRI) allow researchers to document mental states, such methods still reveal little about these states beyond their physiological level. Therefore, future research could best use self-reports or thought verbalization methods, such as thought listing or think-aloud protocols, or combine these with physiological measures. Thought-listing requires participants to provide verbal reports retrospectively of the thoughts that came up while performing a specific task, whereas think-aloud asks participants to verbalize their thoughts while simultaneously performing the task (Rozendaal, Buijzen, & Valkenburg, 2012). Both thought listing and think-aloud methods have been successfully used to uncover intrapersonal processes among children and adults, and hence, they may be feasible methods to investigate the mechanisms leading to self-effects.

Integrating Mass, Interpersonal, and CMC Research

Most of the extant studies into online self-effects discussed in this article appeared to have “imported” theories from neighboring disciplines, predominantly social psychology, whereas cross-citations between communication subdisciplines were much scarcer. Nearly three decades ago, Reardon and Rogers (1988) similarly observed that the mass and interpersonal communication subdisciplines seldom cross-cited each other. Although Reardon and Rogers offered several means of furthering intellectual exchange between the two subdisciplines, the research reviewed in this article suggests that, three decades later, crossing the sub-disciplinary “chasm” is still not a common practice.

Integrative research that crosses different communication subdisciplines is even more sorely needed than a few decades ago. This is in large part due to the paradoxical consequences of social media for academic knowledge acquisition. On the one hand, it takes researchers only an afternoon or two to gather most of the literature needed for an article. On the other hand, due to the abundance of

research dispersed across a variety of (sub)disciplines that use different nomenclature and often fail to cite one another, it is all too easy to miss the forest for the trees. Integrative work that connects the subdisciplines of communication has always been relevant but at this time of rapid and dispersed knowledge proliferation, the need for integrative communication theory and research is more necessary than ever.

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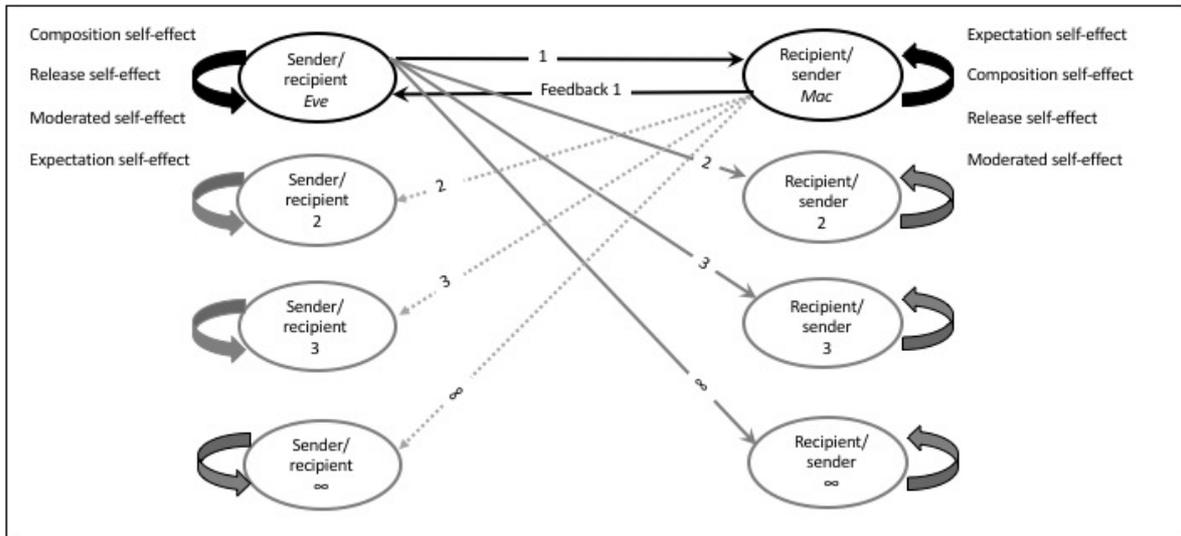


Figure 1: The Online Self- and Reception Effect Model