WILL YOU STILL LOVE ME TOMORROW? SOCIOMETER THEORY AND SEXUAL SELF-ESTEEEM

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By

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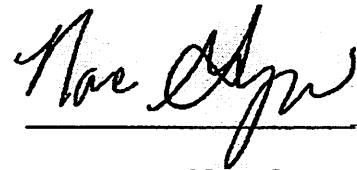
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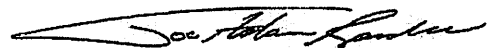MASTER OF ARTS

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Will You Still Love Me Tomorrow? Sociometer Theory and Sexual Self-Esteem

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ABSTRACT

Self-esteem is often conceptualized as a general reflection of how as individual feel about themselves. However, research has shown self-esteem is not only an active component of our social selves, but it is also uniquely tied to different kinds of relationships. Sociometer theory presents an avenue for examining self-esteem as a dynamic system and for exploring changes domain-specific self-esteem such as sexual self-esteem. The present study seeks to examine changes in sexual self-esteem from a sociometer theory perspective. Participants were first exposed to primes related to sexuality/sexual experiences (e.g., positive sexuality condition vs. negative sexuality condition) by completing a scramble-sentence task. After being exposed to one of the two priming conditions, they completed an evaluative priming procedure, embedded within a lexical decision task, in which the words *I, me,* or *myself* will be subliminally presented before positively and negatively sexually evaluative words and non-words. Finally, participants completed two subscales (*sexual self-efficacy* and *sexual esteem*) of the Multidimensional Sexual Self-Concept Questionnaire (MSSCQ) and the Rosenberg Self-Esteem Scale. A main effect for valence was found, such that participants responded faster to the positive sexually evaluative words regardless of their priming condition. Likewise, there was no significant difference between scores on the MSSCQ subscale between the two priming conditions. One explanation for these results is that implicit priming for domain-specific self-esteem, such as sexual self-esteem, might not be adequate to activate a domain-specific sociometer. Domain-specific self-esteem might require more explicit tasks that are more overtly related to the psychosocial domain of interest, to access that domain's sociometer and induce changes in domain-specific self-esteem.

ACKNOWLEDGEMENTS

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INTRODUCTION

Evolutionarily speaking, sociality has been considered an adaptive quality to improve chances for survival. As such, it has facilitated the rise of psychological mechanisms in humans to aid in our social behaviors and interactions. One such psychosocial mechanism, self-esteem, not only indicates how we generally feel about ourselves but can also help guide social behavior. Self-esteem can act as a guide by motivating us toward behaviors that result in successful social interactions and away from behaviors that result in social rejection or exclusion. Further, self-esteem can fluctuate depending on a specific social interaction and the individuals involved (e.g., being rejected by a potential sexual partner). Self-esteem can also change depending on what is currently happening in our environment (i.e., state/specific self-esteem). As such, looking at self-esteem as a general self-evaluation (or trait/global self-esteem) does not fully capture the complex, multifunctional capacity of self-esteem. So, while self-esteem is frequently viewed as a measure of how we generally feel about ourselves, self-esteem can be better conceptualized as a fluid and nuanced system exerting influence across a variety of psychosocial domains. To understand the significance of self-esteem across psychosocial domains, it is important to understand self-esteem itself.

Traditionally, self-esteem is defined as an individual's subjective evaluation of their own self-worth (Luciano & Orth, 2017). In other words, self-esteem is thought of as global or trait level cognitive-affective evaluation of the self. It can also be considered as an individual's average level of self-esteem across different situations and over time. Previous research has demonstrated those with high levels of global self-esteem tend to report greater personal value, which can have a positive impact on one's social, physical, sexual, and psychological health. In essence, those with high self-esteem tend to hold more positive perceptions of themselves and

accept their faults, while those with low self-esteem tend to have more negative perceptions

about themselves and blame others for their own shortcomings after social rejection (Li, Llu,

Ruan, & Zhang, 2015). Similarly, self-esteem was shown to relate to perceptions of the self,

perceptions of one's partner, and individual's metaperceptions (e.g., how a partner evaluates how

the other partner thinks/feels about the relationship) regarding their interpersonal relationships

(Morry & Sciangula, 2009). As such, perceived acceptance by others might be integrated into

one's feelings of self-worth. Feelings of self-worth then further feed into how we perceive our

social interactions and how we subsequently behave. However, self-esteem tends to vary across

individuals as we go through lives operating in our social world.

Self-esteem is not uniform across all people and a variety of factors can influence global

levels of self-esteem. For instance, Orth and Robins (2014) found self-esteem has a typical

trajectory of increasing during late adolescence and young adulthood, and rapidly peaks between

ages 50-60 years. Self-esteem then tends to decrease into advanced age (over 80 years). In

addition to age, racial background and personality traits (like emotional stability,

conscientiousness, and extraversion) predicted self-esteem. Self-esteem also predicted an

individual's success and well-being in important life domains (e.g., work, health, and personal

relationships). In sum, self-esteem is predicted by many factors and has significant outcomes

across various aspects of our lives. Exploring the different factors and the implications of those

factors on self-esteem is important to fully understanding the complexity of self-esteem and

understanding how it exerts influence on different facets of human behavior.

While self-esteem has previously been conceptualized as a general self-evaluation, it may

be that self-esteem is a more diverse, cognitive-affective system that acts on different aspects of

our psychosocial functioning. In other words, self-esteem is more than just an indication of how

someone generally feels about themselves; there may be self-esteem(s) related to different, specific aspects of oneself, such as intellect, appearance, career performance, sexuality and so forth. Additionally, self-esteem is relational in nature making it inherently social; but not all social relationships have the same significance to an individual. So, while self-esteem is intertwined with our social nature, it may be that changes in self-esteem differ depending on the significance of different relationships. For example, someone may feel less attractive, and therefore have lower self-esteem regarding their appearance, but also think that they are intellectually gifted and have higher self-esteem regarding their intelligence. Further, someone may feel they make an excellent friend and have higher self-esteem regarding their friendship capabilities, but also think they make an incompetent sexual partner and have lower self-esteem regarding their capabilities as a sexual partner. Essentially, some areas related to self-esteem can be higher, while others may be lower; but those areas are not completely dependent upon each other.

It could be that global self-esteem is a general gauge of how one feels about themselves across all psychosocial domains. However, self-esteem can also be specific to a psychosocial domain and gauge how one feels about themselves within that domain exclusively. In other words, self-esteem can change day-to-day depending on our various interactions and those changes are ultimately related to our global self-esteem. However, changes at global and state levels are not so strictly tied together such that if self-esteem changes at one level, it must or will always change at other levels. As such, these different self-esteems (global/trait and specific/state) work together in a complex and dynamic way. Self-esteem, therefore, must be more than a passive, static self-evaluative mechanism. Thus, it is necessary to approach self-

esteem from the perspective that self-esteem is more of a nuanced, complex, and diverse

psychosocial system.

Sociometer Theory

Self-esteem can aid us in our social functioning by telling us how we feel about ourselves

within the context of different social situations. For example, one's self-esteem might decrease if

rejected by a potential sexual partner. Contrarily, one's self-esteem might increase after receiving

an important job offer. So, examining self-esteem at global levels can tell us how we feel about

ourselves overall but cannot necessarily provide insight into how we feel about ourselves in a

specific social context in which we can experience rejection/exclusion or acceptance/inclusion.

Viewing self-esteem at a global, general level suggests increases and decrease in self-esteem can

generalize to all psychosocial domains which maybe an oversimplification of self-esteem's

capabilities. This static perspective of self-esteem fails to fully explore the intricacies of self-

esteem: why self-esteem changes in response to social interactions, how self-esteem varies

across different psychosocial domains and different social interactions, and how self-esteem

functions as more than a reflection of self-evaluations.

Exploring the nuances of self-esteem and its role in our psychosocial functioning requires

a reevaluation of self-esteem itself. As a step toward changing the conceptualization of self-

esteem as a more dynamic system, Leary, Tambor, Terdal, and Downs (1995) proposed the

sociometer model of self-esteem or sociometer theory. Sociometer theory posits self-esteem

functions as a monitoring system of individuals' feelings of inclusion or exclusion from others.

Fluctuations in self-esteem then motivate individuals to behave in ways that will minimize the

possibility of being rejected or excluded. For instance, decreases in self-esteem (e.g., breaking up

with a romantic partner) signal present or imminent rejection/exclusion/social disapproval; thus,

a modification in behavior would be enacted to avoid further rejection. As self-esteem gauges the reactions of others and fluctuates to guide behavior, our motive for self-esteem is ultimately to protect ourselves against social rejection/exclusion and their adverse outcomes. As such, state levels of self-esteem impact how we act and react to others, given different contexts. Therefore, self-esteem at a state level is an integral part of our development of social relationships and how we navigate complex social situations/relationships throughout our lives.

Self-esteem does not play a passive role in our psychosocial functioning. Leary and colleagues (1995) assert self-esteem operates as more of an active system that monitors the reactions of others to gauge our own levels of inclusion/acceptance or exclusion/rejection. Fluctuations in self-esteem indicate the quality of our social relationships (i.e., the degree to which we feel socially accepted, included, etc. by others) and motivate us to adapt our behavior to protect us from social rejection. They found events that would lead to social acceptance or rejection and feelings of inclusion highly correlated with self-reported feelings of self-esteem. Further, social exclusion related to a decrease in self-esteem, when exclusion occurred for personal reasons (e.g., one's attractiveness or personality). Finally, they found a correlation between global self-esteem and degree of inclusion or exclusion felt. Their work demonstrated that self-esteem was not only related to social inclusion but was also affected by the degree to which individuals' *feel* included or excluded. The sociometer model of self-esteem argues self-esteem evolved as a social adaptation to monitor and regulate behavior in interpersonal relationships. As it gauges an individual's degree of social inclusion and exclusion, it motivates the individual behave in ways that maintain social relationships and avoid rejection. As the formation and maintenance of close relationships is important to our well-being and survival,

changes in self-esteem become crucial in navigating close relationships and guiding behavior toward successful social interactions.

Self-Esteem and Intimate Relationships

Social acceptance provides an evolutionary benefit for survival and we are naturally motivated to seek it out. Further, self-esteem fluctuates in response to salient cues of social acceptance/rejection. However, there may be specific, distinct desires to be accepted by friends, colleagues, family, current romantic partners, and potential sexual partners. So, the desire for general social acceptance does not necessarily equate to a desire to feel accepted by a particular person. Furthermore, self-esteem can change after a successful or unsuccessful social interaction, even if one still feels social acceptance from other people. Thus, feeling rejected by one person, like rejection from a potential sexual partner, might lower one's self-esteem as it relates to their sexuality, but that does not necessarily mean self-esteem would decrease in another psychosocial domain. Therefore, variance in fluctuations in self-esteem indicate self-esteem is a multidimensional system acting across different situations without necessarily changing self-esteem in unrelated domains. Kirkpatrick and Ellis (2001; as cited in Kavanagh & Scrutton, 2015), for example, propose multiple domain-specific sociometers that each monitor social acceptance within distinct social settings. Although they did not specify how many different sociometers exist, they suggest any group setting that is important for survival might have its own sociometer gauging the social interactions and behaviors specific to their respective domains.

Group living for humans has meant the evolution of psychological mechanisms to create and maintain different close social relationships and selectivity in social affiliation. Within the domain of mating, attributes like perceived mate value and self-esteem evolved to guide behavior

in order to maximize individuals' fitness potential and, thus, increase reproductive success (Kavanagh & Scrutton, 2015; Bennett, Cox, Fisher, & Gavric, 2008). Likewise, these attributes aid in discriminating the mate value of others, which allows for selective affiliation with those who provide reproductive fitness benefits. However, other factors such as self-assessments of attractiveness, potential mate availability, and individual histories of sexual acceptance or rejection can influence and/or constrain the mating process. As such, a psychological system, like self-esteem, evolved to monitor social interactions and guide mating behavior.

Research investigating changes in self-esteem has provided support for the notion of a sociometer for mate selection that gauges individuals' self-esteem and subsequent mating behaviors following experiences in mate rejection and acceptance. For instance, Ellis, Kavanagh, and Robins (2010) demonstrated a decrease in self-esteem after experiencing rejection from a potential romantic partner, while an increase in self-esteem was seen for those who experienced acceptance from a potential romantic partner. Further, those who experienced acceptance from a potential romantic partner also reported greater mating aspirations. In other words, they reported themselves as more compatible with highly attractive and less attractive individuals compared to those who experienced rejection, who reported themselves as more compatible with less attractive individuals only (i.e. low mating aspirations). Importantly, this pattern between acceptance/rejection and relationship aspirations did not translate to friendships. For both men and women, the experience of rejection from a potential romantic partner did not decrease self-reports of friendship compatibility with other individuals (friendship aspirations). However, the experience of acceptance from a potential romantic partner did not increase self-reports of friendship compatibility. Thus, this study demonstrated there is a sociometer specific to mating that does not generalize to other close relationships (i.e., friendships), meaning the outcomes of

romantic interactions impact self-esteem and the desire to approach others with romantic intent.

However, changes in self-esteem and subsequent behaviors from a romantic interaction do not

translate across all interpersonal relationships. So, while it is clear self-esteem plays an active

role in our mating or romantic pursuits, self-esteem might also be an active agent in our pursuits

for intimacy outside of the context of mating/romantic relationships (i.e., sexual intimacy).

Using self-esteem like a meter, rather than a buffer, provides a reproductive adaptive

advantage in that fluctuations in self-esteem can motivate the individual to behave in ways that

increase social acceptance from potential/current intimate partners and chances of successful

intimate (romantic or sexual) interactions. Further, changes in self-esteem can also deter patterns

of behavior that have been unsuccessful in intimate interactions and/or have resulted in rejection.

Therefore, self-esteem plays an integral part in our mating strategies and, ultimately, our mating

success. With such an important role within the domain of mating, self-esteem must also be

sensitive to our social interactions with people in different kinds of relationships. If a mating

sociometer can gauge for acceptance during interactions with potential mates, other sociometers

should also help us navigate other types of relationships, like sexual relationships.

Self-Esteem and Sexuality

Self-esteem is sensitive to our social relationships and can exert an influence on those

relationships. However, self-esteem does not change uniformly across all psychosocial domains

because we form different kinds of social relationships that have different psychosocial

components. For example, global self-esteem can have specific outcomes within the domain

sexuality and sexual relationships. Ahrold, Meston, and Stephenson (2011) found certain types

of motivation are related to sexual satisfaction in both men and women. Sexual motivations, such

as love/commitment, self-esteem, and resources, have been found to be related to sexual

satisfaction. Their results demonstrated global self-esteem is a sexual motive for both men and women, meaning both men and women pursue sex as a means to feel good about themselves. However, while individuals may use sex to feel good about themselves (i.e., increase self-esteem), there is not necessarily a benefit to self-esteem to increase sexual satisfaction. In other words, people could still have low self-esteem while using sex to try to feel better about themselves and also not experience sexual satisfaction in the process. While these results show sexual satisfaction is not derived from global self-esteem, these concepts may be linked in a more intricate way. Therefore, measures of global self-esteem maybe too broad to capture the complexities of self-esteem and sexuality. As such, it is necessary to reassess the role of self-esteem within the specific domain of sexuality and the type of self-esteem that should be examined when studying sexuality, sexual relationships, and sexual experiences.

Sexual Self-Esteem

Global self-esteem fluctuates in response to our social interactions/relationships, including those relationships that are sexually intimate. Sexual self-esteem differs from global self-esteem in that it is exclusive to the domain of sexuality. It also differs in that it is focused on self-perceptions of oneself as a sexual being, as opposed to self-perceptions of oneself within an intimate social interaction. Sexual self-esteem is defined as one's evaluations of one's sexual appeal, sexual competency, sexual behaviors, and one's perceived value of themselves as a sexual being (Mayers, Heller, & Heller, 2003). Specific internal and external factors can positively and negatively predict sexual self-esteem. Heinrichs, MacKnee, Auton-Cuff, and Domene (2009) found confidence in self and a sense of autonomy, openness and comfort with one's sexuality, enhancement and satisfaction with appearance, sexual empowerment, and engaging in sexual intercourse predicted higher sexual self-esteem in women. Alternatively, lack

of openness in one's sexuality, lack of appropriate or positive sex education, cultural and societal

expectations, being used sexually, sexual guilt, and shame surrounding one's sexuality predicted

lower sexual self-esteem. Sexual self-esteem, however, was a unique and better predictor of

sexual communication than global self-esteem. As such, it is necessary to understand sexual self-

esteem as its own separate and distinct component of global self-esteem.

Like global self-esteem, it is necessary to understand what impacts sexual self-esteem

and what can result from changes in sexual self-esteem. Further, just as global self-esteem can be

changed by a variety of factors related to different aspects of the self, sexual self-esteem can be

influenced by a variety of factors directly related to the domain of one's sexuality, like engaging

in sexual intercourse. However, other factors more indirectly related to sexuality, such as

religious commitment, can also have consequences for one's sexual self-esteem. Abbott, Harris,

and Mollen (2016) examined the impact of religious commitment on women's sexual self-

esteem. They found women high in religious commitment had less permissive sexual attitudes

and were less likely to be accepting of casual sex. Religious fundamentalism was also negatively

correlated with the moral judgment subscale of the Sexual Self-Esteem Inventory for Women

(Zeanah & Schwarz, 1996). This negative relationship indicates religious women are less likely

to perceive their sexual feelings/behaviors as acceptable and in line with their own moral

standards. Not surprisingly then, they also found a significant relationship between religious

commitment and sexual self-esteem such that women with higher religious commitment reported

lower sexual self-esteem (Abbott, Harris, and Mollen, 2016). As social beings, self-evaluations

can impact our group membership and individual relationships, but self-evaluations can be

viewed through the lens of group affiliation.

Our evaluations of our relationships help us determine not only our level of satisfaction with the relationship, but also how we feel about ourselves in the relationship. So, how we feel about ourselves and how we feel about our relationships are interrelated. Sexual self-esteem, however, has a unique influence in intimate (romantic/sexual) relationships. Specifically, sexual self-esteem is positively related to sexual satisfaction in romantic relationships (Menard & Offman, 2009) and this relationship has been shown to be mediated by sexual assertiveness, such that those with higher sexual self-esteem may feel more confident to be sexually assertive and, thereby, experience more sexual pleasure. Bigras, Brassard, Godbout, and Péloquin (2014) examined the moderating effects of perceived support from a romantic partner on individual's romantic attachment and sexual self-esteem, sexual anxiety, and their sexual assertiveness. Their results indicate perceptions of relationships are related to sexual self-esteem, among other dimensions of one's sexuality. Importantly, their results demonstrate sexual self-esteem can change depending on perceptions of romantic relationships. Combined with the studies mentioned previously, it is evident perceptions of one's intimate relationships can impact one's sexual self-esteem. Further, sexual self-esteem impacts perceptions of the quality and level of satisfaction, especially sexual satisfaction, within romantic relationships. So, it is clear sexual self-esteem plays an important and active role in romantic relationships. However, the functions of sexual self-esteem may go even further than its role in romantic relationships and self-perceptions; and as such it is worth examining sexual self-esteem regardless of one's romantic relationship status.

Present Study

While high global self-esteem has been shown to be related to high sexual self-esteem, these two constructs are very different from each other. Sexual self-esteem focuses on one's self-

evaluations specifically as a sexual being and is arguably more relevant to the domain of

sexuality than global self-esteem. Sexual self-esteem has been shown to be a unique predictor of

sexual communication and is positively related to sexual satisfaction in romantic relationships.

With such unique variance in the influential factors and effects of sexual self-esteem versus

global self-esteem, it is necessary to examine self-esteem as it independently pertains to different

life domains. Sociometer theory presents such an approach to studying self-esteem in such a way

as to examine changes in self-esteem across different domains. Additionally, research using

sociometer theory supports the notion multiple sociometers exist as gauges of state-level self-

esteem during social interactions across different domains. So, sociometers may also act as a

gauge for different types of self-esteem as they relate to different domains.

The current literature on sociometer theory supports domain-specific sociometers; thus, a

domain-specific approach, like sociometer theory, is appropriate when examining self-esteem

within a particular life domain. For instance, the mating sociometer is sensitive to changes in

self-esteem within the domain of romantic relationships or potential mates. However, the mating

sociometer is often used to look at self-esteem regarding mating or romantic relationships. The

mating sociometer can detect changes in self-esteem in relation to one's current romantic

relationship or a previous romantic relationship, but that does not mean it can also detect changes

in self-esteem in relation to one's current, previous, or prospective sexual relationships.

Additionally, research related to the mating sociometer examines self-esteem at global levels,

and do not examine sexual self-esteem, specifically. Therefore, it is worth further investigation

of sociometer theory's application to sexual self-esteem and sexual relationships. Further,

because sexual self-esteem is present regardless of one's romantic relationship status, it can and

should be examined both within and outside the context of romantic relationships; one's sexual

self-esteem can still be influenced regardless of current romantic relationship status. From a sociometer approach, a sociometer specific to the domain of sexual relationships (both within and outside the context of a monogamous romantic/mating relationship) would facilitate changes in sexual self-esteem when relevant. Therefore, the domain-specific approach of sociometer theory would detect changes in state-levels of sexual self-esteem when cues relating to sexual rejection/acceptance are salient. Additionally, despite the relationship between global and sexual self-esteem, global self-esteem maybe too broad and too interrelated with other relationships to exclusively examine changes in a specific type of self-esteem of a particular domain.

The present study focuses on the domain of one's sexuality and changes in sexual self-esteem from the perspective of sociometer theory. From this perspective, cues relevant to positive aspects of sexuality and/or sexual interactions may induce changes in sexual self-esteem which would motivate changes in behavior to maintain or increase acceptance. Alternatively, when an individual is exposed to cues relevant to negative aspects of sexuality and/or sexual interactions, there will be changes in sexual self-esteem, which may motivate a change in behavior to avoid some degree of sexual rejection.

In order to induce fluctuations in sexual self-esteem, participants are first exposed to sexuality primes. These are to prime for positive aspects of sexuality/positive sexual experiences (e.g., affection, aroused, desire, and sexy) or prime for negative aspects of sexuality/negative sexual experiences (e.g., alone, despise, failure, or frigid). Participants then complete a scramble-sentence task, in which they have to complete sentences with the positive sexuality primes (e.g., affection, aroused, desire, and sexy) or negative sexuality primes (e.g., alone, despise, failure, or frigid). After being exposed to one of the two sexuality priming conditions, they complete an evaluative priming procedure (a lexical decision task), in which the words *I*, *me*, or *myself* or a

single X will be subtly presented before positively (e.g., erotic, passion, or flirt) and negatively

(e.g., impotent, rejected, or useless) sexually evaluative words as well as non-words. For each

trial, participants indicate if the stimulus presented is a real word or a non-word. Based on

sociometer theory, priming participants with cues relevant to positive aspects of

sexuality/positive sexual experience or cues relevant to negative aspects of sexuality/negative

sexual experiences will activate participants' mental representations of sexuality, sexual partners,

sexual interactions, and so forth. Those active mental representations then influence fluctuations

participants' sexual self-esteem, which would further influence their behavior as seen in

participants' responses during the lexical decision task. It is predicted that after being exposed to

a positive sexuality prime, participants in that group will have activated some mental

representation of positive aspects of sexuality/positive sexual experiences. Therefore, reaction

times to positive sexually evaluative words will be faster than negative sexually evaluative

words. For those exposed to a negative sexuality prime, participants will have activated some

mental representation of negative aspects of sexuality/negative sexual experiences. Thus, their

reaction times will be faster to negative sexually evaluative words compared to positive sexually

evaluative words. Finally, in order to explore the relationship between implicit associations (as

measured with the priming and conditioning tasks), participants complete two subscales of the

Multidimensional Sexual Self-Concept Questionnaire (MSSCQ; Snell, 2003). It is predicted

those in the positive sexuality prime condition will report higher scores on the two subscales

indicating higher levels of sexual self-efficacy and sexual esteem compared to the negative

sexuality prime condition. Likewise, those in the negative sexuality prime condition will have

lower scores on the two subscales indicating lower levels of sexual self-efficacy and sexual

esteem compared to the positive sexuality prime condition. The subscales of Multidimensional

Sexual Self-Concept Questionnaire will be used as an explicit measure of sexual self-esteem.

Participants will also complete the Rosenberg Self-Esteem Scale (Rosenberg, 1965) as a global

measure of self-esteem. These two sexual self-esteem measures (the lexical decision task and the

MSSCQ) will be used to determine if there is a relationship between an individual's implicit

sexual self-esteem and their explicit sexual self-esteem. For online data collection, the software

PsyToolkit was used (Stoet, 2010, 2017).

METHOD

Participants

A sample of participants (N = 489) were recruited via Amazon's Mechanical Turk.

Participants were compensated $2.00, in accordance with the terms of service of Mechanical

Turk's Participation Agreement. The survey and experiment in this study were implemented and

presented online using the PsyToolkit platform (Stoet, 2010, 2017).

Measures

Multidimensional Sexual Self-Concept Questionnaire. Participants completed two

subscales of the Multidimensional Sexual Self-Concept Questionnaire (MSSCQ; Snell, 2003).

The MSSCQ has 100 items to which participants respond on a 5-point Likert scale from 0-4 how

characteristic each item is of themselves: *not at all characteristic of me* (0), *slightly*

characteristic of me (1), *somewhat characteristic of me* (2), *moderately characteristic of me* (3),

and *very characteristic of me* (4). The 100 items comprise 20 subscales (5 items per subscale)

that measure different psychological aspects related to human sexuality: (1) *sexual anxiety*, (2)

sexual self-efficacy, (3) *sexual consciousness*, (4) *motivation to avoid risky sex*, (5) *chance/luck*,

(6) *sexual preoccupation*, (7) *sexual assertiveness*, (8) *sexual optimism*, (9) *sexual problem self-*

blame, (10) *sexual monitoring*, (11) *sexual motivation*, (12) *sexual problem management*, (13)

sexual esteem, (14) *sexual satisfaction*, (15) *power-other sexual control*, (16) *sexual self-schemata*, (17) *fear of sex*, (18) *sexual problem prevention*, (19) *sexual depression*, and (20) *internal sexual control*. Due to the length of the MSSCQ in its entirety and because most of its subscales are arguably irrelevant to the purposes of the present study, participants only completed the *sexual self-efficacy* (2) and the *sexual esteem* (13) subscales. The *sexual self-efficacy* (2) subscale is defined as the belief in an individual's ability to deal effectively with aspects of their sexuality (e.g., "I have the ability to take care of any sexual needs and desires that I may have."). The *sexual esteem* (13) subscale is defined as a generalized tendency to positively evaluate an individual's capacity to engage in healthy sexual behaviors and to experience their sexuality in a satisfying and enjoyable way (e.g., "I derive a sense of self-pride from the way I handle my own sexual needs."). High scores on the *sexual self-efficacy* and the *sexual esteem* subscales correspond to higher levels of sexual self-efficacy and sexual esteem, respectively. Similarly, low score on both subscales correspond to lower levels of sexual self-efficacy and sexual esteem, respectively.

  Rosenberg Self-Esteem Scale. Participants also completed the Rosenberg Self-Esteem Scale, a measure of global self-worth by assessing both negative and positive feelings about the self. The Rosenberg Self-Esteem Scale is comprised of 10 items to which participants respond on a 5-point Likert scale from Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). High scores on the Rosenberg Self-Esteem Scale indicate higher self-esteem while lower scores indicate lower self-esteem.

Procedure

  Priming manipulation. The priming manipulation consisted of a scramble-sentence task similar to the one used by DeMarree et al. (2016). This task was used in a classic study by Srull

and Wyer (1979; as cited in McCarthy et al., 2018) of hostility priming but has since made a cross-over to other areas of social psychology where the original findings have been heavily replicated and extended beyond priming effects for hostility judgments. The scrambled-sentence task is used to prime subjects for a certain construct or mental representation to then measure subsequent attitudes, behaviors, beliefs, stereotypes etc. pertaining to that construct/mental representation.

DeMarree and colleagues (2016) implemented a scramble-sentence task to prime subjects for older adult stereotypes. Participants in their stereotype priming condition received 15 sets which contained words stereotypical of older adults (e.g., *sunlight makes temperature wrinkle raisins* becomes *sunlight makes raisins wrinkle*) and 15 sets with words unrelated to older adult stereotypes (e.g., *sweet makes clock sugar cookies* becomes *sugar makes cookies sweet*). A neutral condition was also included in which participants only received sets of words irrelevant to older adult stereotypes. Participants in both conditions completed a total 30 sets of words.

In the present study, the scramble-sentence task was implemented as a prime for sexuality-related mental representations. Participants were randomly assigned to either a positive sexuality prime or negative sexuality prime condition before beginning the scrambled-sentence task. Words for this task were specifically selected to activate mental representations of positive aspects of sexuality/positive sexual experiences (e.g., acceptance, cute, desired, loved, etc.) or negative aspects of sexuality/negative sexual experiences (e.g., alone, broken, despise, neglect). Participants were given a total of 30 sets of five words from which they had to select four words and rearrange those words to create a grammatically correct sentence. In the positive sexuality condition, 15 sets out of the 30 total sets contained positive words related to intimacy, emotion, and positive qualities associated with a sexual partner or sexual interaction (e.g., *desire company her for home* becomes *desire for her company*) to prime for mental representations of positive

aspects of sexuality/positive sexual experiences. The other 15 sets of words contained neutral words unrelated to intimacy, emotion, self-esteem, and sexuality (e.g., *detail more me give sharp* becomes *give me more detail*). In the negative sexuality prime condition, 15 sets out of the 30 contained negative words related to intimacy, emotion, and negative qualities associated with a sexual partner or sexual interaction (e.g., *bedroom my behavior by embarrassed* becomes *embarrassed by my behavior*) to prime for mental representations of negative aspects of sexuality/negative sexual experiences. The other 15 sets of words contained neutral words unrelated to intimacy, emotion, self-esteem, and sexuality. The same neutral words were used in both priming conditions. The words used for this prime were selected from Bradley and Lang's Affective Norms for English Words (ANEW; Bradley & Lang, 1999). ANEW words are normed words that have been rated for valence (positive, neutral, and negative affect) on a 9-point Likert Scale. Low ratings (one to three) are considered negative, while high ratings (seven to nine) are considered positive. Neutral ratings are between four to six. Positive words selected for this task were high in valence ratings ($M = 7.77$, $SD = .45$) while negative words were low in valence ($M = 2.66$, $SD = .44$) and neutral words used in both conditions had a neutral rating ($M = 5.08$, $SD = .67$).

   Evaluative priming procedure. The evaluative priming procedure used in the present study was embedded within a lexical decision task similar to the procedure used in DeMarree et al.'s (2016) study (adapted from Dijksterhuis, 2004, Experiment 1). Evaluative conditioning procedures traditionally involve changing the liking of a neutral stimulus by pairing that stimulus with another affective (positive or negative) stimulus and measuring changes in liking of the neutral stimulus (Baeyens, De Houwer, & Thomas, 2001). These procedures have been used in research across a variety of fields and a wide range of stimuli/paradigms have been developed to

observe changes in the valence of stimuli after evaluative learning or conditioning. Dijksterhuis (2004) implemented a lexical decision task commonly used in evaluative conditioning research. In Dijksterhuis' experiment, participants completed this evaluative conditioning task embedded in a lexical decision task as a prime, with the aim of enhancing participants' implicit self-esteem. Participants in the conditioned self-esteem condition and control condition completed a total of 30 trials with the conditioned self-esteem group receiving 15 trials (out of the total 30 trials) that contained a positive trait word and the remaining 15 trials contained non-words or random strings of letters. The word *I* appeared before the target words (both the positive trait words and the neutral words) and Xs were presented before the non-words or random letter strings. The positive trait and neutral words were targets for the task; and participants were instructed to decide whether or not the word presented on the screen was a real word or non-word by pressing one of two keys. After pressing a key, the target disappeared followed by a 1-second delay before the next trial began. After completing the primed lexical decision task, participants completed the initial-preference task as a measure of implicit self-esteem.

In DeMarree et al.'s (2016) study, participants completed a similar lexical decision task as an evaluative conditioning procedure for self-esteem. Participants were first presented a string of Xs for 500 ms followed by a subliminal prime for 100 ms then a target word or non-word. The target word or non-word remained on the screen until participants indicated if it was or was not a real word followed by a 1,000 ms intertrial interval. Participants in the high self-esteem condition received target words with a positive valence and participants in the control condition received target words that were neutral in valence; both the positive and neutral words were targets. All participants completed 6 practice trials which contained only neutral target words. For the critical trials in both conditions, *I*, *me*, or *myself* (randomized across trials) were used as

the subliminal prime before target words and Xs were used as the subliminal prime for non-words. Participants in both conditions completed 15 different trials with target words and 15 different non-words, with each appearing twice, for a total of 66 trials. After the evaluative conditioning procedure, participants completed the state self-esteem scale.

In the present study, participants completed an evaluative priming procedure embedded in a lexical decision task after completing the scrambled-sentence priming task. It is modified from the evaluative conditioning procedure because it was unknown if a change would be induced. During each trial, an X or the words *I, me,* or *myself* were subliminally presented for 100 ms. before a target word or non-word. Participants had to respond within two seconds to the target words and non-words. In both the positive sexuality prime and the negative sexuality prime conditions, participants began the task with ten (10) practice trials consisting of only neutral target words and non-words. During the critical trials, each target word and non-word followed the subliminal presentation of the words *I, me,* or *myself* (randomized across trials; see Figure 1). As a counterbalance, an X was also subliminally presented before each target word and non-word. The positive sexuality prime and negative sexuality prime conditions both received the positive valence sexually evaluative and negative valence sexually evaluative target words and non-words, with each appearing multiple times (once after the subliminal presentation of the words *I, me, myself* and once after the subliminal presentation of an X). Like the scrambled-sentence priming manipulation, words used in this evaluative priming procedure were selected from Bradley and Lang's (1999) ANEW.

ANEW words are normed words that have been rated for valence (positive, neutral, and negative affect) on a 9-point Likert Scale. Low ratings (one to three) are considered negative, while high ratings (seven to nine) are considered positive. Neutral ratings are between four to

six. Positive target words were positive in valence ($M = 7.66$, $SD = .42$), related to self-esteem,

sex, and/or related to positive perceptions of a sexual partner or interaction (e.g. adorable,

capable, passion, sexy etc.), while negative target words were negative in valence ($M = 2.61$, SD

$= .82$), related to self-esteem, sex, and/or related to negative perceptions of a sexual partner or

interaction (e.g. aloof, betray, impotent, rejected, ugly, etc.). Positive and negative words were

similar in arousal ratings ($M = 5.8$ and $M = 5.4$ respectively). Reaction times were recorded for

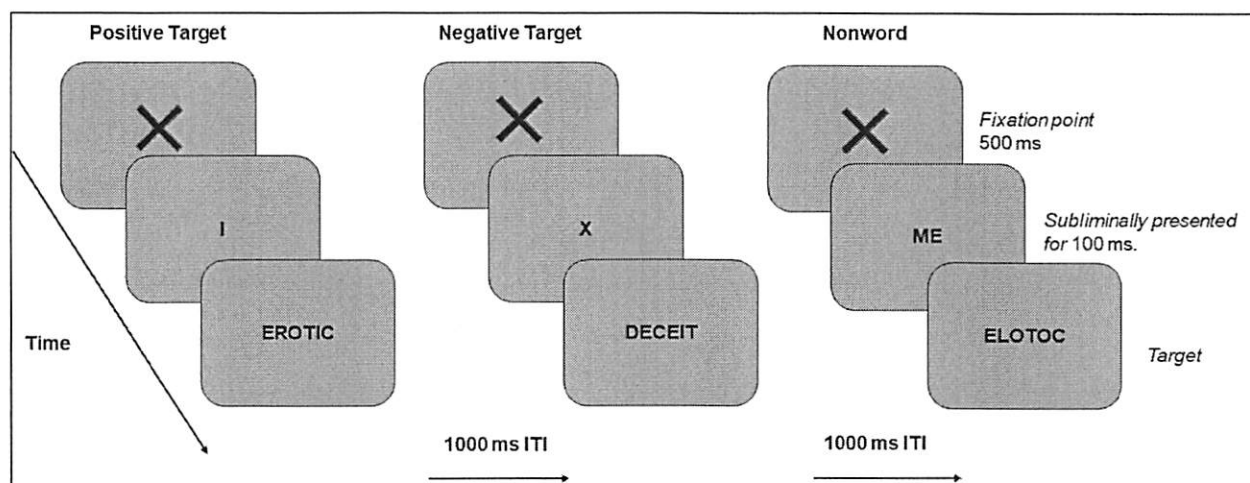both conditions across all trials, as an implicit measure of sexual self-esteem/self-evaluations.

Figure 1. Sample trial sequence of a positive word, negative word, or non-word.

After completing the priming manipulation and evaluative priming procedure,

participants completed the *sexual self-efficacy* and the *sexual esteem* subscales of the MSSCQ.

Participants' scores on the MSSCQ subscales were calculated as an explicit measure of sexual

self-esteem/sexual self-evaluations. Participants also completed the Rosenberg Self-Esteem

Scale as a measure of global self-esteem.

This experiment is a 2×2 mixed factorial design, with the sexual self-esteem prime

(sexually positive vs. sexually negative) as the between-subjects variable and sexual self-esteem

evaluation (positive or negative valency) as the within-subjects variable. The dependent variable is the reaction times (RTs) for the lexical decision task within the evaluative priming procedure.

RESULTS

Evaluative Priming Procedure Reaction Time Analysis

Mean RTs were submitted to a 2 × 2 mixed analysis of variance (ANOVA), with sexuality priming (positive sexuality vs. negative sexuality) as the between-subjects variable and target valence (positive, negative, or nonword) as the within-subjects variable. Results demonstrated a main effect of target valence, $F(2, 974) = 100.29$, $p < .001$. Figure 2 illustrates the pairwise comparisons, which indicated that participants responded faster to the positive target words ($M = 602.88$, $SD = 244.06$) than to the negative target words ($M = 629.28$, $SD = 257.69$) than nonwords ($M = 657.23$, $SD = 278.30$). No other main effects were significant, all $ps > .05$.
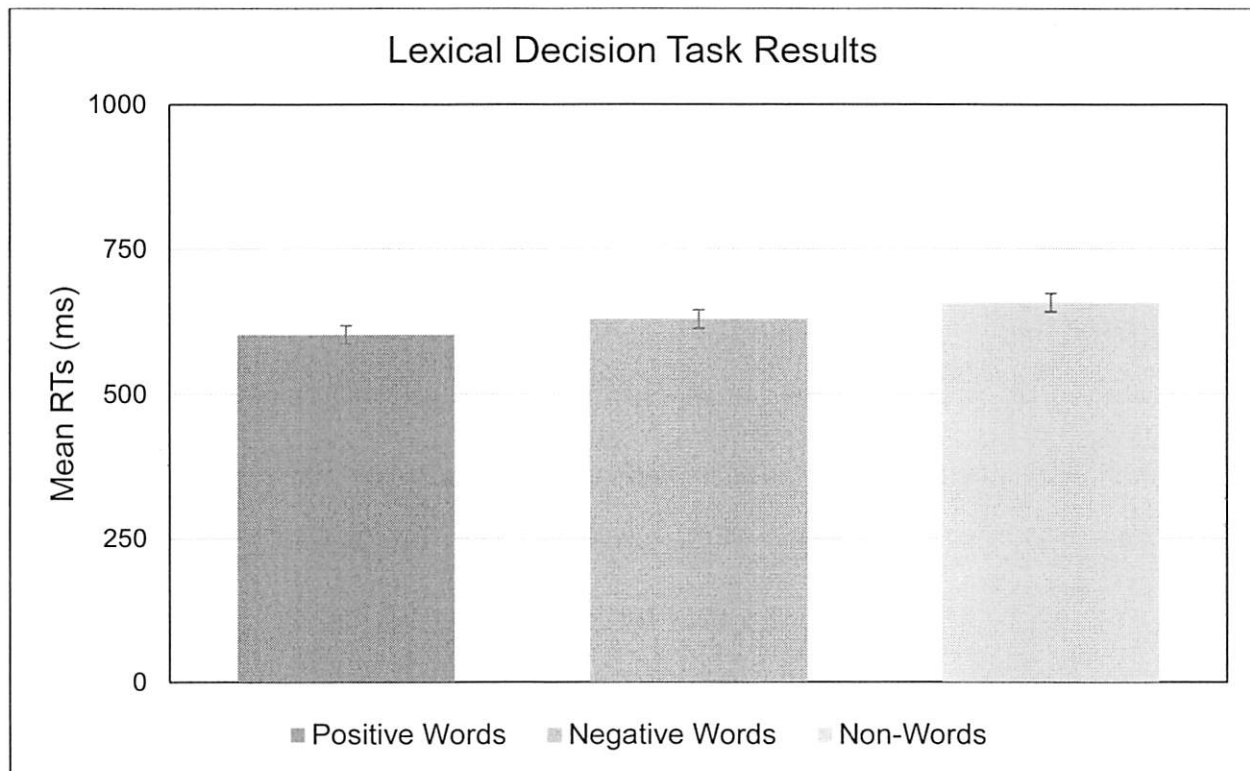

Figure 2. Lexical decision task results for target valence. Error bars represent the standard error of the mean.

A Prime Condition × Target Valence was not demonstrated, $F(2, 489) = 0.51$, $p = .60$. However, results (see Figure 3) indicated that those in the positive sexual prime condition demonstrated target valence effect ($M = 615.63$, $SD = 266.7$) and responded faster to the positive words than the negative words and nonwords. Those in the negative sexuality prime conditions demonstrated the same patterns of results ($M = 590.12$, $SD = 227.49$).
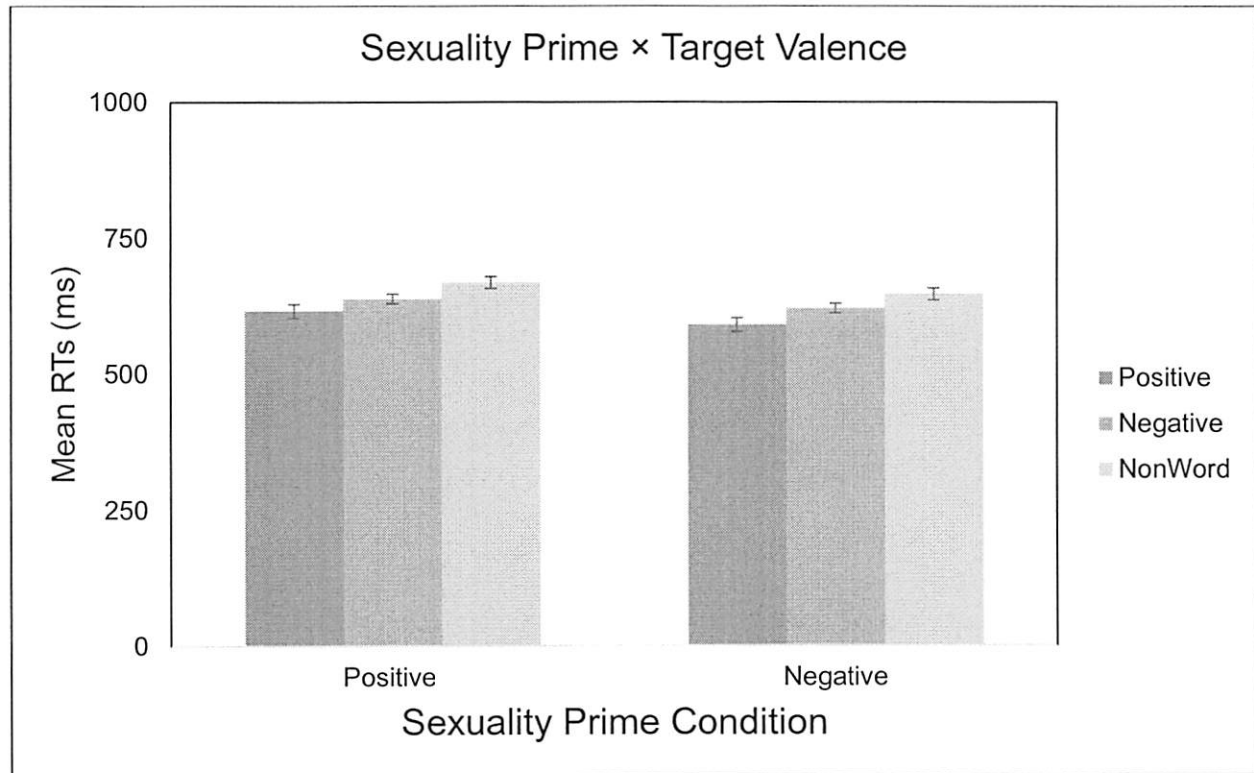

Figure 3. Participants' results a similar pattern of response times across all target valence conditions between sexuality prime conditions.

Multidimensional Sexual Self-Concept Questionnaire Scores

Mean scores on the sexual self-efficacy and sexual esteem subscales of the MSSCQ were submitted to an independent samples *t*-test. Participants in the negative sexuality prime condition had higher scores on the *sexual self-efficacy* subscale of the MSSCQ ($M = 3.08$, $SD = .86$) than did those in the positive sexuality prime condition ($M = 2.89$, $SD = .77$), $t(470) = -2.49$, $p=.01$. There was no significant difference between participants in both the positive and negative

sexuality prime conditions ($M = 2.75$, $SD = .81$; $M = 2.72$, $SD = .89$ respectively) on the *sexual esteem* subscale of the MSSCQ $t(469)= .40$, $p= .69$; indicating participants had similar self-reported levels of sexual esteem, regardless of their sexuality prime condition (Figure 4).
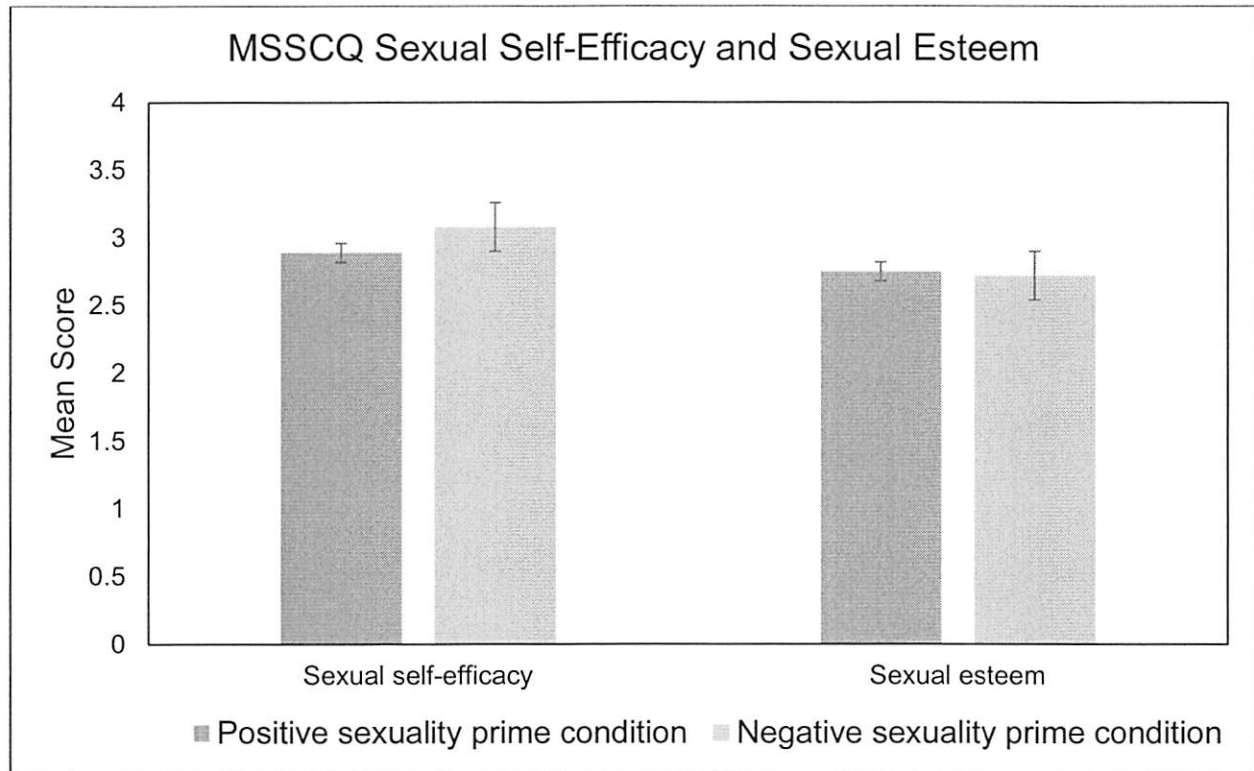

Figure 4. MSSCQ results for mean scores on the *sexual self-efficacy* and *sexual esteem* subscales.

DISCUSSION

It was expected that, after being exposed to a positive sexuality prime, participants would respond faster to the positive sexually evaluative words than to the negative sexually evaluative words. In the negative sexuality prime condition, it was expected participants would respond faster to the negative sexually evaluative words compared to the positive sexually evaluative words. These results were not demonstrated; however, there was an impact of target valence. Participants in both the negative and positive priming conditions responded faster to the positive sexually evaluative words compared to the negative and nonwords. In other words, participants

overall responded faster to positive information than negative or neutral (nonword) information. This is a common finding in attention and memory studies (Reed, Chan, & Mikels, 2014). This is due to how important emotional information is regarded. Emotional information can be important for survival and reproduction, and therefore capture our attention (Fox, Russo, Bowles, & Dutton, 2001). Thus, emotional information tends to be prioritized over neutral information. This could explain why participants demonstrated this pattern of results.

While an interaction was predicted, it was not observed. Participants in both sexuality prime conditions showed the same pattern of the target valence effect (faster to positive than negative than neutral targets). Additionally, sexual self-esteem scores on the MSSCQ did not differ between the groups. At first glance, the results do not support the idea of multiple sociometers. While this could be accurate, the results of the present study might be speaking to the implicit/explicit nature of self-esteem as a sociometer and of multiple sociometers relating to specific psychosocial domains. Fluctuations in self-esteem tend to happen in a situationally specific manner. Individuals may have multiple sociometers, but access to those sociometers may require a conscious, attentional process. For instance, one may feel less competent as a sexual partner, but that may only come to awareness when one is in a situation that grants you access that sexual self-efficacy sociometer, such as when you are dating a sexual partner or about to engage in sexual behaviors with others. Thus, access to that sociometer may only happen when in a situation where one is consciously aware of the situation.

From a sociometer theory perspective, changes in self-esteem would (or should) be apparent in changes in social behaviors. Further, when we experience intense highs and lows in self-esteem, they can be linked to significant social interactions that have a personal impact on how we feel about ourselves. It is not until we experience a personally significant interaction, or

a specific aspect of our psychosocial selves is brought to our attention that we bring self-esteem and domain-specific self-esteem to the spotlight of our mind. Anecdotally, when we are asked how we feel about ourselves, we often reflect on how we feel overall about ourselves. When we are asked how we feel about ourselves in a specific capacity, like as a friend or lover, then we begin to look closer at how we feel about ourselves within a certain psychosocial context. As such, when inducing and measuring changes in domain-specific self-esteem, it might be that implicit priming cannot adequately activate a certain aspect of their social selves. Explicit or overt cueing might be required to move further past a general evaluation of the self and into self-evaluations within a specific context.

Global self-esteem can be thought of as an individual's average level of self-esteem across situations and over time. However, studies of sociometer theory demonstrate our self-esteem is not just global but also specific to different psychosocial domains. As such, global self-esteem and domain specific self-esteem are separate yet interrelated. Domain specific sociometers become active when we are in a related social context; so, activating a domain specific self-esteem might require a context or paradigm that is at least closely related to the relevant social domain. In other words, domain specific self-esteem, like sexual self-esteem, might require more overt cues related to a specific kind of social interaction to activate a domain specific sociometer, and subsequently induce changes in behavior and self-reported levels of self-esteem. As such, implicit priming tasks, such as the scramble sentence task used in this study, might not be powerful enough to reach a threshold that can separately influence a domain specific self-esteem from global self-esteem.

If self-esteem is an active psychosocial mechanism, then attention to an active context might be required to access that sociometer. To that extent, the priming task used in this study

presents a methodological limitation. The scramble sentence task in this study was intended to implicitly prime sexual self-esteem. However, if a domain specific sociometer needs explicit, specific social cues then this implicit priming task would fail to activate a domain specific sociometer or influence changes in domain specific self-esteem. Future directions for this study include implementing a different priming task. A different priming task that is more overt in its connection to sexuality and intimacy might prove to be strong enough to impact participants' moods and, subsequently, induce changes in behavior during the lexical decision task.

Self-evaluations, such as self-esteem, are more than reflections of how we generally feel about ourselves; they are intertwined with our relationships and influence how we interact with others. Self-esteem guides our social behaviors to help us develop and maintain close relationships. Just as our close relationships are unique unto themselves, self-esteem can uniquely fluctuate depending on the present social context. Furthermore, changes in self-esteem relating to specific psychosocial domains feed into how we view ourselves and how we perceive our relationships. Because self-esteem is such a dynamic component of our social selves, understanding the nuances of self-esteem can help us understand ourselves as individuals and as social beings across different types of relationships. Understanding sexual self-esteem, specifically, is important for understanding sexuality on individual levels and how an individual's sexual self-esteem impacts their social, sexual interactions.

Close relationships are often complex which can make navigating them tricky. Sexual relationships can be especially complicated, perhaps due to their intimate nature. As such, understanding evaluations of the self as a sexual being (i.e., sexual self-esteem) can aid in understanding how we perceive and navigate sexual relationships, whether those sexual relationships are within the context of a romantic relationship or not. To that end, when we can

unravel the nuances of sexual self-esteem, we can further our understanding of how to provide

therapeutic help couples and individuals that struggle with sexual intimacy.

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