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## Within-Person Variability of Internal and External Sexual Consent

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Within-Person Variability of Internal and External Sexual Consent

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy in Community Health Promotion

by

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July 2020  
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## ABSTRACT

**Background:** Sexual consent is often conceptualized as an internal willingness to engage in sexual activity, which can be communicated externally to a sexual partner. Preliminary evidence indicates that people's sexual consent varies from day to day. Study designs that assess sexual consent at multiple time points (e.g., experience sampling methodology [ESM]) are needed to better understand the within-person variability of sexual consent; however, extant validated measures of sexual consent are not appropriate for ESM studies, which require shorter assessments due to the increased burden this methodology has on participants. As such, the goal of this dissertation was to develop valid ESM measures of sexual consent and then administer them in an ESM study.

**Methodology:** In Manuscript 1, I selected items that demonstrated face validity as evidenced by cognitive interviews ( $n = 10$ ) and content validity as evidenced by experts' ratings ( $n = 6$ ). To assess the construct validity and feasibility of these items, I administered the selected ESM measures of sexual consent in a seven-day pilot study ( $n = 12$ ). In Manuscript 2, I conducted a 28-day ESM study ( $n = 113$ ) to assess whether and how internal consent feelings and external consent communication vary from day to day.

**Results:** In Manuscript 1, the results suggested that the ESM measures developed in the present study were valid and feasible assessments of people's day-to-day internal consent feelings and external consent communication. In Manuscript 2, I found that more than 50% (and up to 80%) of the variance in sexual consent scores could be accounted for by within-person variability. Using multilevel models, I further found that internal consent feelings predicted external consent communication when accounting for both within- and between-person variability.

**Conclusion:** Overall, the findings of this dissertation provided initial evidence regarding the extent that situational contexts are relevant for sexual consent. Future research on sexual consent should consider using ESM study designs to investigate the potential momentary contextual, intrapersonal, and interpersonal factors of individual partnered sexual events that are associated with people's internal consent feelings and external consent communication. I concluded with recommendations for sex researchers interested in ESM.

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# CHAPTER 1

## INTRODUCTION

Sexual consent is a timely topic across the globe. People—even media, laws, and society—are actively thinking about sexual consent and what it means. According to Google Trends (2019) data, search interest for “sexual consent” has increased every year since 2004. Sexual consent is currently trending in the mainstream discourse in response to high-profile social injustices, such as the onslaught of sexual assault narratives from Hollywood and the acquittal of rugby players accused of a gang rape in Northern Ireland. These two examples reinvigorated Tarana Burke’s #MeToo movement and sparked the #IBelieveHer trend, respectively. In Iceland and Sweden, legislation that passed in March 2018 redefined sexual assault by emphasizing the need for unambiguous sexual consent (148th Legislative Assembly of Iceland, 2018; Swedish Justice Committee, 2018). In Ghana, politicians are resetting the legal age of sexual consent (Batoma, 2019). In India, lawmakers reconceptualized what sexual consent means in the context of marriage—courageously confronting long-standing cultural and religious traditions (India Times, 2018). In the United States, approximately 1500 institutions of higher education have recently adopted standards mandating explicit sexual consent communication on campus (Bennett, 2016). I planned to continue the momentum of these steps forward with a research project that extends current understanding of sexual consent.

What is sexual consent? Extant research indicates that sexual consent is complex and is contextual. In the academic literature, sexual consent has been conceptualized as an internal willingness to engage in sexual activity; this willingness may be expressed externally (Hickman & Muehlenhard, 1999; Jozkowski, Sanders, Peterson, Dennis, & Reece, 2014). However, research suggests that the way people communicate their consent can vary—by gender, by

relationship status, by type of sexual behavior (Humphreys, 2007; Jozkowski & Peterson, 2013, Marcantonio, Jozkowski, & Wiersma-Mosley, 2018; Willis, Hunt, Wodika, Rhodes, Goodman, & Jozkowski, 2019). Because people are diverse in how they interact with others, people must be wary of defining too precisely how sexual consent should be expressed. As society attempts to define sexual consent, it will be beneficial to investigate what sexual consent means in different contexts. For example, researchers know very little about the day-to-day within-person variability of sexual consent. Does a person's experiences with sexual consent one day influence how they feel or communicate their consent the next? Does a person's daily relationship satisfaction affect their experience of consent that day? Do ever-changing factors like time, location, or mood matter? There are countless contextual factors related to sexual consent that researchers must continue to examine.

### **Defining Sexual Consent**

Informed by conceptual and empirical reviews, Willis and Jozkowski (2019) defined sexual consent as “one's voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context” (p. 1723). This definition maintains that sexual consent is an internal experience—one that is distinct from, but may be related to, sexual desire (Peterson & Muehlenhard, 2007). To assess the variety of feelings associated with an internal conceptualization of sexual consent, one research team asked participants to write about the feelings they associate with being willing to engage in sexual activity (Jozkowski, Sanders, et al., 2014). These researchers identified and validated five feelings related to internal consent: physical response, safety/comfort, arousal, agreement/want, and readiness. Thus, whether somebody is willing to engage in a particular behavior with a

particular person within a particular context depends on a multidimensional process of internal feelings.

Because people cannot automatically know the feelings of others when they engage in partnered sexual activity, sexual consent cannot only be conceptualized as an internal experience (Hickman & Muehlenhard, 1999). Rather, sexual partners communicate their consent (Beres, 2007, 2014; Muehlenhard et al., 2016). Active consent communication refers to anything people *do* that indicates their consent and is diverse in practice; it can be verbal or nonverbal and explicit or implicit. People tend to rely on nonverbal consent cues more than verbal cues (Jozkowski, Sanders, et al., 2014; Muehlenhard et al., 2016; Vannier & O’Sullivan, 2011). Examples of people’s self-reported nonverbal consent communication include moaning, positioning oneself to prepare for a sexual behavior, increasing physical contact, and making facial expressions (Beres, 2010, 2014; Hickman & Muehlenhard, 1999; Jozkowski, Sanders, et al., 2014). People also report communicating their sexual consent verbally—asking for sexual behavior directly (e.g., “Will you have sex with me?”), verbalizing sexual intent (e.g., “Do you have a condom?”), or using seemingly benign phrases (e.g., “Let’s take this upstairs.”) in a sexual tone (Hickman & Muehlenhard, 1999; Jozkowski, Sanders, et al., 2014).

While internal and external sexual consent are distinct concepts, greater internal consent is associated with active consent communication at the event-level (Jozkowski, Sanders, et al., 2014). Further, Willis, Blunt-Vinti, and Jozkowski (2019) found that participants with higher levels of internal consent used increasingly diverse constellations of consent communication cues. Regarding the types of consent communication, participants’ use of nonverbal cues more strongly reflected their internal consent feelings than verbal cues. While verbal cues were also

positively associated with feelings of internal consent; these associations were weaker and not practically significant.

### **Nuances of Sexual Consent**

Most studies to date have investigated between-person variability in sexual consent feelings and communication. For example, sexual consent varies by gender, age, and race/ethnicity. Women are less direct and less verbal in their consent communication than men (Jozkowski, Peterson, et al., 2014). People aged 18–25 reported higher internal consent scores compared with those who were older than 45 (Willis, Blunt-Vinti, & Jozkowski, 2019). Racial/ethnic minorities might be less explicit and verbal in their consent cues than White participants (Walsh, Honickman, et al., 2019; Willis et al., 2019). Research to date has not reported notable group differences in sexual consent based on sexual orientation (Beres et al., 2004; Walsh, Honickman, et al., 2019).

However, little is known regarding within-person variability of internal or external sexual consent. Previous studies on how sexual consent varies by context between people provide initial evidence that a person's consent can depend on the situation. For example, researchers have consistently shown that sexual consent can vary by relationship status (Marcantonio et al., 2018; Willis, Hunt, Wodika, Rhodes, Goodman, & Jozkowski, 2019) and type of sexual behavior (Hall, 1998; Humphreys, 2007; Jozkowski, Peterson, et al., 2014; Willis, Hunt, et al., 2019). Other examples of contexts relevant to consent include alcohol (Jozkowski & Wiersma, 2015) and setting (Jozkowski, Manning, & Hunt, 2018). While these contextual factors give insight into the potential within-person variability of sexual consent, they are typically assessed at the event-level. As such, most conclusions made by previous research are based on between-person differences at a moment in time—rather than within-person differences across time.



While this approach indeed shows that particular contexts (e.g., type of sexual behavior) can change how a person experiences and communicates their consent, cross-sectional studies are unable to track how sexual consent might vary from day to day—thus, accounting for the potential influence of countless contexts that fluctuate. Therefore, to assess within-person variability, a few research teams have asked participants about sexual consent multiple times over a study period (e.g., using daily diaries). For example, Willis and Jozkowski (2019) asked participants every day over the course of 30 days whether they had engaged in sexual activity that day. On days that participants were sexually active, they reported whether they communicated their consent and how. Willis and Jozkowski (2019) found that the way sexual consent was reportedly communicated varied not only between people but also within people and across experiences. For example, on some days a person might rely on active communication to interpret sexual consent with their sexual partner (e.g., “She asked if I wanted to have sex”); however, on other days, that same person reported they assumed consent without using communication cues (e.g., “It just happened;” Willis & Jozkowski, 2019, p. 1729). These open-ended daily diary data suggested that sexual consent is not stable from one sexual encounter to the next. However, this study and others that have used daily diaries to collect data on sexual consent (O’Sullivan & Allgeier, 1998; Vannier & O’Sullivan, 2011) presented the quantitative data as an aggregate and thus did not add to the literature on the specific nuances of how sexual consent might vary from day to day.

### **Experience Sampling Methodology**

The need to design studies that can capture the within-person variability of sexual consent remains. To account for the daily nuances regarding sexual consent, Willis and Jozkowski (2019) recommended that researchers use experience sampling methodology

(ESM)—also referred to as ecological momentary assessment (EMA)—in future sexual consent research. Therefore, I designed a study that is better able to measure the within-person variability of sexual consent—conceptualized as both internal feelings and external communication.

Studies that have collected data able to assess the within-person variability of sexual consent have been limited in at least two ways. First, researchers that have assessed how people experience or communicate their willingness to engage in different sexual behaviors have relied on retrospective data (Hall, 1998; Marcantonio et al., 2018; Willis, Hunt, et al., 2019). A strength of ESM is that it likely reduces the potential recall bias inherent to most self-reported data (McCallum & Peterson, 2012; Willis & Jozkowski, 2018). Specifically, this methodology administers survey items for several days, multiple times a day—thus minimizing the time between events of interest and the participants’ reports regarding those events by. Second, researchers who have previously used daily diaries to investigate sexual consent (O’Sullivan & Allgeier, 1998; Vannier & O’Sullivan, 2010; Willis & Jozkowski, 2019) aggregated these data in their presentation of the findings. This approach is not ideal because it eliminates the ability to quantitatively assess within-person variability (Schwartz & Stone, 1998). Alternatively, ESM data provide researchers the ability to address this dissertation study’s research questions as long as the appropriate analytic strategies are used. These are described in detail in the methodology section.

Given these notable limitations of previous research, robust evidence regarding the within-person variability of sexual consent is lacking. As such, I conducted a study designed to capture how sexual consent can vary from experience to experience. Such a study extends a growing body of literature that has investigated the within-person variability of several other constructs related to sex. For example, ESM has already been used to demonstrate substantial

within-person variability of sexual interest (Fortenberry & Hensel, 2011), sexual satisfaction (Meltzer & McNulty, 2016; Muise et al., 2014), sexual desire (Shrier & Blood, 2015), sexual objectification (Holland et al., 2017), sexual intimacy (Kashdan et al., 2017), HIV risk behavior (Simons, Maisto, & Palfai, 2019), and sexual function (Paquet et al., 2018).

## **Dissertation Study**

The primary goals of the dissertation study were to (1) design measures of internal consent feelings and external consent communication that are appropriate for ESM studies and (2) assess the within-person variability regarding feelings of sexual consent and sexual consent communication.

For Manuscript 1, *Developing Valid Measures of Internal and External Sexual Consent for Experience Sampling Methodology*, I designed and validated measures in three steps: (1) cognitive interviewing, (2) expert ratings, and (3) pilot testing. In this manuscript, I described this three-step process of developing these measures and presented evidence regarding face validity, content validity, and construct validity of the items.

For Manuscript 2, *Assessing the Within-Person Variability of Internal and External Sexual Consent*, I used these measures in a 28-day ESM study designed to answer the following research questions regarding the within-person variability of sexual consent.

**RQ1:** To what extent do internal and external sexual consent vary within people (Willis & Jozkowski, 2019)?

**RQ2:** Do internal feelings of consent predict people's type of consent communication cues across experiences as previous studies have shown to be the case at the event-level (Jozkowski, Sanders, et al., 2014; Willis, Blunt-Vinti, & Jozkowski, 2019)?

## **Contributions to the Field**

The findings from this dissertation study provided further empirical support for the conceptualization that sexual consent is contextual (Willis & Jozkowski, 2019). The existing literature has typically only been able to inform consent education programs on how sexual consent might vary across groups; however, the findings from this dissertation study were expected to provide insight regarding whether researchers should be considering the day-to-day nuances of sexual consent. For example, do internal feelings or external communication of consent from previous sexual encounters affect how consent is experienced during future encounters? Also, do day-to-day variations in sexual consent predict constructs like relationship satisfaction or sexual satisfaction? Beginning to answer these types of questions expands the growing literature on the complexities of sexual consent.

The dissertation study's novel contributions provided a previously unexplored facet of sexual consent for several stakeholders to consider. Researchers might examine how previously supported group differences (e.g., gender or relationship status) might vary based on the context of a sexual encounter. Educators could include the effects of context on sexual consent in their curricula, providing students with a model of consent that might be more applicable to their lives than a one-size-fits-all approach (e.g., affirmative consent initiatives). Relationship therapists may draw on how circumstances between partners can influence sexual consent in an attempt to improve communication and relationship satisfaction. Combined with methodological rigor, these prospective implications support the dissertation study's worth to the scientific study of sexuality.

## CHAPTER 2

### REVIEW OF THE LITERATURE

This dissertation study sought to advance our understanding of sexual consent. To provide a foundation for current conceptualizations of consent, I described the history of the word “consent” and described its usage. I then built toward academic definitions of sexual consent—explaining the internal and external conceptualizations that prevail in the extant literature. Then I reviewed previous findings on how sexual consent varies between people and by context. Finally, based on these nuances and initial evidence that sexual consent also varies within people, I designed a study to assess the day-to-day within-person variability of sexual consent.

#### **Etymology of “Sexual Consent”**

Before getting into the intricacies of sexual consent as a construct, I will provide a brief history of the word “consent” because words, and language more broadly, can shape our realities (Whorf, 1952). As such, paying homage to the etymology of words and the evolution of their usage can inform modern conceptualizations.

“Consent” first appeared in the English language around 1300 and was derived from the Old French verb *consentir*—meaning “to agree or comply”—and noun-equivalent *consente* (Oxford Lexico, 2019). Delving deeper into the origins, these Old French words were taken directly from the Latin *consentire*, which is an amalgamation of *com*, meaning “together,” and *sentire*, meaning “feel.” These word stems appears in several familiar English words, like communal or sense. Thus, the earliest definition of the word consent was “to feel together.” The evolution from “feeling together” to “agreeing” or “giving permission” first happened in French but was shortly replicated in English.

However, the word “consent” was not initially used to refer to a person’s willingness to engage in sexual activity or people’s agreement to engage in sexual activity. According to Google Books data (Michel et al., 2011), for the first few centuries of its use in written text, “consent” was typically something granted by the King, Parliament, nations, or fathers. Further, in this initial era of usage, people wrote about “consenting to” laws, taxation, war, and marriage. For half a millennium, “consent” continued to be used in the written text to refer to legal or political agreements. It was not until the 1900s that people began regularly using this word for more personal applications. This evolution of the word continued to the point that—in the 1970s—medical treatment became the predominant object of “consent to” (Michel et al., 2011). Around this same time, people started frequently “consenting to” sex in written texts. Sex increasingly became the object of “consent to,” and this usage of consent was second only to “consenting to” treatment in 2008, which is the most recent available data on written texts (Michel et al., 2011). However, when examining web searches, “consent to sex” became more commonly searched for than “consent to treatment” in 2009 (Google Trends, 2019). In the past decade, search interest for “consent to sex” has continued to increase. “Sexual consent,” “consent to sexual,” and “consent to sex” are the three most common phrases to refer to sexual consent in both written texts and web searches.

Although “consent” and “assent” are listed as synonyms, “sexual *consent*” has historically been the preferred term to denote people’s willingness to engage in sexual behavior. In fact, there are no recorded instances of “sexual assent” in the Google Books database (Michel et al., 2011). Regarding the difference between “consent” and “assent,” Bryan Garner in *Modern English Usage* (2016) wrote the following:

the traditional distinction is that assent denotes agreement with an opinion, while consent denotes permission to let something happen. Assent contains a touch more enthusiasm and support than consent, which suggests mere acquiescence. Today assent is becoming less and less common; it survives mostly in formal uses. (p. 77)

This subtle discrepancy in usage clarifies why “sexual *consent*” is used to refer to people’s permission or acquiescence to engage in sexual behavior. While “assent” denotes agreement, which people might consider synonymous with sexual consent, this agreement is directed toward thoughts or opinions rather than behaviors.

Having reviewed the evolution of the word “consent” and its usage patterns, let us now explore *how* people have referred to sexual consent—culminating in modern definitions of sexual consent used in academic literature. According to Google Books data (Michel et al., 2011), the first recorded reference to sexual consent was in *A Treatise on the Law of Evidence as Administered in England and Ireland* (Taylor, 1848), which stated in the context of rape laws that a “girl under 10 cannot consent to sexual intercourse” (p. 1355). Chronologically, the next recorded example of sexual consent was in *The Central Law Journal* (Lawson, 1878); this text discussed a court case wherein a female prostitute “had consented to sexual intercourse with the prisoner, but would not have done so if she had known he was diseased” (p. 294). The court ruled that the defendant was guilty of sexual assault—decreeing that fraud violates the terms of any contract, sexual or otherwise. Then *A Text Book of Medical Jurisprudence for India* (Lyon, 1889) reviewed several instances in which the “consent of the female is invalid” (p. 320): under misconception of fact, when being of unsound mind or intoxicated, under threat of harm or death, and when the man knows that he is not her husband. Based on the many nuances captured in these first recorded examples of sexual consent, it is clear that people were thinking about and

defining sexual consent well before these early conceptualizations were printed in the 19<sup>th</sup> century. Consistent across these first three references and those in the next century, people have historically considered sexual consent in the context of situations wherein consent is not present.

For many years, the academic literature similarly focused on “nonconsent.” In her review of published research on sexual consent, Beres (2007) noted that “searching for the term ‘sexual consent’ yielded between 30 and 42 results, while searching for ‘rape’ yielded between 2705 and 8145 results, and ‘sexual assault’ yielded between 1016 and 2006 results” (p. 94). Though sexual assault is inextricably intertwined with sexual consent, researchers have argued that it is meaningfully different to explicitly investigate consensual sexual activity—as opposed to nonconsensual sexual activity (Humphreys, 2007; Jozkowski & Peterson, 2013). While authors still tend to frame the implications of their findings on sexual consent as most applicable for preventing nonconsensual sexual activity (Muehlenhard et al., 2016), research specifically investigating sexual consent has increased considerably since Beres’ review in 2007—and even since Muehlenhard et al.’ review in 2016 (Willis, Blunt-Vinti, & Jozkowski, 2019). Understandably for a younger topic of study, the existing body of empirical on sexual consent work is still actively navigating how to define “sexual consent.”

### **Academic Definitions of Sexual Consent**

It is not always clear what researchers mean when they use the term “sexual consent.” Two reviews of the literature revealed a lack of consistency in defining sexual consent, instead highlighting an ambiguity that still underlies consent research (Beres, 2007; Muehlenhard, Humphreys, Jozkowski, & Peterson, 2016). In her review, Beres (2007) noted that within the academic literature on sexual consent “there is no consensus on what it is, how it should be defined, or how it is communicated” (p. 94). She described sexual consent as a concept that



researchers often use artlessly: “many scholars fail to define consent explicitly through their work...forcing the readers to rely on assumed definitions” (p. 105).

But readers may misinterpret a study’s findings if they are forced to rely on assumed definitions. For example, people have recently been given the impression that sexual consent can only be explicit and verbal in nature (Beres, 2014; Curtis & Burnett, 2017). As a result, Beres (2014) argued that students do not understand the word “consent” to mean willingness and that they conceptualize “consent” to be consistent with “affirmative consent” policies. Because readers may assume that this is what authors are talking about when they refer to “sexual consent,” the use of “sexual consent” needs to be clarified whenever used in studies and among fellow researchers in academic publications.

In the wake of Beres’ (2007) chastisement, researchers publishing on sexual consent in the past decade have been explicitly providing definitions for sexual consent (Table 1). When researchers define consent, there remain sundry definitions. And even though researchers are more regularly defining sexual consent for their readers, they may not be doing so consistently across their articles. Table 1 shows that several authors who have published multiples studies on sexual consent did not define this construct in at least one of their articles.

By far the most cited definition of sexual consent is “the freely given verbal or nonverbal communication of a feeling of willingness” to engage in sexual activity (Hickman & Muehlenhard, 1999, p. 259). This landmark study in the academic literature on sexual consent argued that any conceptualization of sexual consent is incomplete without considering both the feelings of willingness (i.e., a mental act) and expressions of willingness (i.e., a physical act). Other definitions of sexual consent typically include or emphasize aspects of Hickman and Muehlenhard’s definition. For example, affirmative consent definitions often stress the need for

specific physical acts of consent (e.g., “only an explicit, uncoerced, enthusiastic ‘yes’ should be considered consent; Silver & Hovick, 2018, p. 506). However, such definitions ignore the feelings of willingness that Hickman and Muehlenhard argued are integral to understanding sexual consent.

A more recent review of the sexual consent literature identified and described the three prevailing definitions of sexual consent: (1) consent as an internal state of willingness, (2) consent as an act of explicitly agreeing to something, and (3) consent as a behavior that someone else interprets as willingness (Muehlenhard et al., 2016). First, sexual consent can be conceptualized as an unobservable internal state of willingness. Because internal feelings of consent are intangible, laws and policies are not keen to rely on this definition of consent; instead, they rely on behaviors—express or implied—that may be used to try to communicate or infer willingness. Second, express, or affirmative, sexual consent refers to a person clearly and unambiguously communicating to another person that they agree to engage in sexual activity. Third, implied sexual consent is another behavioral conceptualization; in this case, consent can be suggested by indirect signals that can either be active or passive. Other people then need to infer whether the person in question is consenting based on these behaviors that could be as subtle as silence. Even together, these three conceptualizations may not represent a complete definition of sexual consent.

Drawing from and building on these previous definitions of internal sexual consent, Willis and Jozkowski (2019) defined sexual consent as “one’s voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context” (p. 1723). The novel contribution of this definition is that sexual consent should be conceptualized as hyper-specific—and thus able to vary from behavior to behavior, partner to

partner, and situation to situation. As such, the potential for within-person variability of sexual consent is great. However, researchers to date have either (1) relied on methodologies that do not allow them to investigate how people feel or express their consent from day to day (e.g., cross-sectional study designs; Jozkowski, Sanders, et al., 2014; Marcantonio et al., 2018; Willis, Blunti-Vinti, & Jozkowski, 2019) or (2) collected data on sexual consent across several days (e.g., daily diary study designs) but collapsed these data and presented them as an aggregate rather than capitalizing on the day-to-day variability (O’Sullivan & Allgeier, 1998; Vannier & O’Sullivan, 2011; Willis & Jozkowski, 2019). No research to my knowledge has been explicitly designed to examine the within-person variability of sexual consent and presented findings demonstrating the extent that sexual consent varies from day to day. Rather, most of the research on sexual consent has focused on measuring internal consent feelings or external consent communication and assessing between-person differences related to these constructs.

In the sections below, I first reviewed previous research on the internal and external conceptualizations of sexual consent.<sup>1</sup> Then I described how sexual consent varies between people; the literature to date has primarily focused on gender and relationship status. Finally, I presented the limited work that has been done to investigate how a person’s sexual consent varies by the context of the sexual encounter. Each of these aspects of the existing body of work on sexual consent ultimately builds toward the purpose of this dissertation study and the novel trajectory of sexual consent research that I pursued.

**Internal sexual consent.** Whether somebody is willing to engage in a particular behavior with a particular person within a particular context depends on a multidimensional process of internal feelings. Although people tend to equate internal feelings of wanting and consenting,

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<sup>1</sup> Rather than describe the methodologies of studies and demographic characteristics of samples in the text, I compiled this information in Table 2.

Peterson and Muehlenhard (2007) argued that it is useful to conceptualize these as distinct concepts. Specifically, these researchers clarified that

to want something is to desire it, to wish for it, to feel inclined toward it, or to regard it or aspects of it as positively valenced; in contrast, to consent is to be willing or to agree to do something. (p. 73)

Peterson and Muehlenhard acknowledged that wanting may influence consent; they simply emphasized that the two are not synonymous. Demonstrating how wanting sex does not denote consent, a person might want to experience the physical pleasure of a sexual encounter but ultimately not be willing to engage in said sexual encounter because they do not feel emotionally committed to the other person. Similarly, consenting to sex does not always signify that the sex was wanted; a person might not be feeling well and be averse to a sexual encounter but ultimately be willing to engage in said sexual encounter because they want to satisfy the other person. These two possibilities are merely examples to illustrate the distinction between wanting and consent—contexts in which wanting and consenting do not coincide are endless.

In Peterson and Muehlenhard's (2007) study, about a fifth of the participants who were victims of a nonconsensual sexual encounter reported that they wanted the sexual activity to some extent, and half of the participants who referenced a consensual encounter indicated that the sexual activity was unwanted to some extent. In other studies, 22.4–43.8% of young people reported having ever consented to sex that they do not want (Katz & Tirone, 2010; Katz & Schneider, 2015; O'Sullivan & Allgeier, 1998). Therefore, internal sexual consent is distinct from—though regularly overlaps with—wanting to engage in sexual activity, but what other feelings compose a comprehensive internal experience of willingness?

To assess the breadth of feelings associated with an internal conceptualization of sexual consent, one research team asked participants to write about the feelings that they associate with being willing to engage in sexual activity (Jozkowski, Sanders, Peterson, Dennis, & Reece,

2014). Based on these initial elicitation data, the researchers identified several feelings related to internal consent: excitement, physical arousal, agreement, feelings, concerns, safety, intimacy, confidence, attractiveness, enjoyment, and submission. Excitement included feeling turned on, aroused, and in the mood. Physical arousal included feeling vaginally lubricated/erect, lustful, and a rapid heartbeat. Agreement included feeling willing, ready, and sure. Safety included feeling respected, secure, and protected. Feelings included feeling satisfied, happy, and in love. Concerns included feeling nervous, anxious, and hesitant. Intimacy included feeling close to the partner, connected to the partner, and affectionate toward the partner. Confidence included feeling confident, strong, and certain. Attractiveness included feeling pretty, sexy, and attractive. Enjoyment included feeling good, awesome, and pleasurable. Finally, submission included feeling submissive, dominant, and approved of.

Jozkowski, Sanders, and colleagues (2014) further refined items reflecting each of these internal consent feelings by consulting content experts and conducting factor analyses. The resulting Internal Consent Scale (ICS) contained 25 items and reflected 5 factors: physical response, safety/comfort, arousal, agreement/want, and readiness. The ICS asks participants to report their feelings for their most recent consensual sexual experience, and participants tend to report agreeing or strongly agreeing with most of the items assessing their internal consent feelings. As such, scores typically only reflect differentiations at the higher end of the internal consent spectrum; however, previous studies have shown that, while limited, the variability of internal consent scores is enough to identify associations with other variables (Jozkowski, Sanders, et al., 2014; Walsh, Honickman, et al., 2019; Willis, Blunt-Vinti, & Jozkowski, 2019).

**External sexual consent.** Because people are not naturally privy to the feelings of others, sexual consent cannot only be conceptualized as an internal experience (Hickman &

Muehlenhard, 1999). Rather, sexual partners typically find ways to let each other know that they feel ready, safe, aroused, desirous, and physically responsive (Jozkowski, Sanders, et al., 2014; Muehlenhard et al., 2016). Best practice entails partners actively communicating their consent to sexual activity (e.g., Beres, 2007, 2014; Jozkowski, 2015; Muehlenhard et al., 2016), and this communication can vary. Specifically, they could do something or say something; further, their actions and words could be clear or subtle. This two-by-two system of categorization (i.e., verbal vs. nonverbal; explicit vs. implicit) was proposed by Hickman and Muehlenhard (1999) and has since been used as a framework in several subsequent studies (Jozkowski, Marcantonio, Rhoads, Canan, Hunt, & Willis, 2019; Marcantonio et al., 2018; Willis, Blunt-Vinti, & Jozkowski, 2019).

In developing the External Consent Scale (ECS), Jozkowski, Sanders, and colleagues (2014) wrote several examples of behaviors that would fit within each of these active types of communication. Explicit verbal consent cues included saying what you want, asking a partner for sex, and suggesting sex. Implicit verbal consent cues included mentioning sexual activity in conversation to see how they respond, asking to transition to a private setting, and asking for a condom. Explicit nonverbal consent cues included touching lower areas, engaging in foreplay, and removing clothes. Implicit nonverbal consent cues included showing comfort with body language, seeming interested, and motioning for the other person to initiate.

People are diverse in how they communicate their consent nonverbally. The list of behaviors that can potentially indicate sexual consent is endless. Touching somebody's arm. Undoing a bra or belt. Dimming the lights. Lifting hips for underwear to be removed. Or something as seemingly innocuous as taking off eyeglasses. Several different consent cues likely precede consensual sexual behavior—each one may increase the probability that people perceive somebody to be willing to engage in sexual activity (Beres, 2010; Jozkowski et al., 2018).

Despite the apparent subtlety of these types of consent cues, people are deft communicators when it comes to sex, efficiently discerning their partners' nonverbal behaviors (Beres, 2014).

Verbal indicators of consent also come in many sorts (Hall, 1998; Hickman & Muehlenhard, 1999; Jozkowski, Sanders, et al., 2014). From the stilted “Do you want to have sex with me?” to the flavorful “I want to taste you,” there are several phrases people use to show that they are willing to engage in a sexual behavior. “Let’s go to my room.” “Is this okay?” “Will you go down on me?” “I’m ready when you are.” These examples of verbal cues—and their equivalents in other languages—are likely used by people all over the world, but partners might also develop their own euphemisms.

However, the continuous process of consent primarily relies on nonverbal cues (e.g., transitioning from a less intimate sexual behavior to a more intimate one; transitioning from a public setting to a private one). Actions such as these can build on each other in an on-going fashion to indicate that a sexual encounter continues to be consensual. Indeed, research indicates that nonverbal consent cues are used more frequently than verbal cues (Beres, Herold, & Maitland, 2004; Hall, 1998; Hickman & Muehlenhard, 1999; Humphreys, 2007; Vannier & O’Sullivan, 2011). Further, young people think that their peers rely on nonverbal gestures and behavioral actions to communicate sexual consent and negotiate through a sexual encounter (Righi et al., 2019).

As such, one reason that nonverbal consent cues predominate is that verbally communicating consent each time someone slightly moves is “onerous and unrealistic” (Muehlenhard et al., 2016, p. 476). Further, explicit verbal consent communication is often considered to be inconsistent with the cultural norms for sexual consent between partners (Beres, 2007, 2014; Burkett & Hamilton, 2012; Jozkowski, 2015; Muehlenhard et al., 2016). Because

some implicit verbal cues are not be universally understood to indicate consent (Beres, 2010; Jozkowski et al., 2018), young people acknowledge that verbal affirmation of consent tends to diminish confusion regarding their or their partner’s willingness to engage in sexual activity (Righi et al., 2019). However, they might be reluctant to communicate in this way because it can be awkward or ruin the mood (Curtis and Burnett, 2017; Foubert, Garner, & Thaxter, 2006). In fact, some people report that it is easier to have unwanted sex than to deal with the awkwardness of explicit communication (Hirsch et al., 2019). On the other side of the spectrum, implicit verbal cues might be perceived as less awkward; however, they tend to be less clear and thus may be less effective at communicating internal feelings of consent than explicit verbal cues.

Each of the aforementioned types of consent cues—explicit verbal, implicit verbal, explicit nonverbal, and implicit nonverbal—describe active consent communication and refer to anything people *do* (i.e., words and actions) to indicate their willingness to engage in sexual activity and is diverse in practice. There are also passive consent cues, whereby people *don’t do* anything as their way of communicating their consent; this can include not resisting sexual activity or not saying no (Hickman & Muehlenhard, 1999; Willis, Blunt-Vinti, & Jozkowski, 2019). In such instances, inaction or a lack of refusal is considered an indicator of a person’s willingness. Jozkowski, Sanders, and colleagues (2014) provided several examples of passive forms of external sexual consent: letting the other person go as far as they want, not stopping the other person’s advances, and not hesitating. Because these passive cues are ambiguous, Muehlenhard et al. (2016) argued that the lack of resistance to sexual advances is a “necessary but not sufficient” condition for sexual activity to be consensual (p. 24). As a result, people may rely more on active communication cues than passive ones if they have elevated internal feelings of sexual consent (Willis, Blunt-Vinti, & Jozkowski, 2019).



*Associations between internal and external consent.* Internal consent feelings and external consent communication are related (Jozkowski, Sanders, et al., 2014). When developing the ICS and ECS, these researchers found that the two types of consent were significantly correlated—evidencing the notion that internal feelings align with external indicators. Specifically, each active type of external consent communication was positively associated with each type of internal consent feeling; however, passive consent cues were not correlated with any of the internal consent feelings (Jozkowski, 2011). These correlations between active consent communication and consent feelings were recently replicated (Walsh et al., 2019). Though significant, these associations were weak to moderate, which suggests that these types of consent are separate and uniquely contribute to an overall conceptualization of sexual consent.

Further investigating the nature of the associations between internal and external sexual consent, Willis et al. (2019) proposed a model whereby internal consent feelings predicted the consent communication cues participants reported using—based on previous evidence that sexual cognitions tend to precede sexual behaviors (e.g., O’Sullivan & Brooks-Gunn, 2005). They found that nonverbal consent communication cues best reflected internal consent feelings. The associations between verbal cues and feelings of internal consent—while positive and statistically significant—were weaker than those between nonverbal cues and internal consent. The weaker associations between verbal consent cues and internal consent feelings (e.g., physical response, comfort, arousal) may be due to verbal communication about sex feeling awkward and ruining the mood (Curtis & Burnett, 2017; Foubert et al., 2006). Further, participants with higher levels of internal consent feelings used increasingly diverse constellations of active consent communication cues (Willis, Blunt-Vinti, & Jozkowski, 2019). Corroborating Jozkowski’s (2011) data, passive consent cues (e.g., doing nothing) did not

reliably reflect internal feelings of consent—which were instead more effectively revealed via actions or words (Willis, Blunt-Vinti, & Jozkowski, 2019).

### **Between-Person Variability of Sexual Consent**

Sexual consent—internal or external—isn't the same for everybody. That different people experience consent differently has never been more salient to me than when my colleague shared stories about their research (personal communication, Larsson, 2018). Using qualitative methodologies, this person researches female genital cutting in East African communities. Even though questions about sexual consent were not included in the interview protocols, women in their study consistently described a particular consent communication tactic. Worth noting, women in this culture are essentially forbidden from expressing sexual desire. But even so, this researcher described a consent cue women rely on that has emerged in this repressive context. Specifically, when these women were willing to engage in sexual activity with their male partners, they let him know by putting a piece of ice in his cup of milk. Seemingly innocuous, this action is deemed culturally acceptable. However, from these women's descriptions, people in these East African communities seem to widely understand what the women are communicating with this action; as such, putting ice in milk would be considered an explicit consent cue in this context.

Though published studies have not typically provided empirical evidence for differences in sexual consent practices as stark as is demonstrated by this anecdote, there have been many studies examining the extent that different groups experience internal consent feelings and external consent communication as described in the previous section. The most frequently studied between-person difference regarding sexual consent is gender.

**Gender.** According to Google Books (Michel et al., 2011), the first time “sexual consent” appeared as a phrase was in *Ornithology Reprints* (Bryant, 1911); in this book on birds, the author described the female bird’s mating tactics: “not yet aroused to the point of sexual consent she evades the males advances by jumping across court as he springs toward her” (p. 372). From this inaugural mention of “sexual consent,” it was already conceptualized as a gendered phenomenon. According to the traditional sexual script and not unlike this pair of birds, people who identify as women are more likely to be the gatekeeper in a given encounter and thus accept or rebuff a male initiator’s attempt for sex (Curtis & Burnett, 2017; Jozkowski & Peterson, 2013; Wiederman, 2005).

Based on these stereotypically gendered roles, both women and men tend to describe sexual consent as something men get from women (Hirsch et al., 2019; Jozkowski, Peterson, et al., 2014; Pugh & Becker, 2018; Righi et al., 2019). Because women are reinforced as gatekeepers and subsequently experience inhibited sexual agency, they tend to communicate their willingness to engage in sexual activity indirectly—while men are encouraged to do so directly (Curtis & Burnett, 2017; Jozkowski, Marcantonio, & Hunt, 2017; Jozkowski & Peterson, 2013). Evidencing this, a recent study found that men are more likely than women to use explicit verbal cues relative to implicit nonverbal cues (Willis, Hunt, et al., 2019). Research has also shown that women are more likely to let sexual behaviors happen to them without resisting (Jozkowski et al., 2017; Walsh, Honickman, et al., 2019).

These gendered expectations for sexual communication clarify why and how external consent might vary between women and men, but what about internal consent feelings? Comparisons of internal consent based on gender are limited for two reasons: (1) internal consent has received less empirical attention than external consent and (2) two of the few studies on

internal consent only included women in their samples (i.e., Marcantonio et al., 2018; Willis, Blunt-Vinti, & Jozkowski, 2019). The existing literature is mixed but generally indicates that gender differences regarding internal consent may depend on the feeling in question. For example, Jozkowski, Sanders, and colleagues (2014) found that women reported lower levels of arousal and higher levels of safety and comfort than men; however, a different study found that women scored higher on physical response (Walsh, Honickman, et al., 2019). Yet another study found no gender differences in internal consent feelings (Jozkowski & Wiersma, 2015).

Outside of studies looking directly at internal consent feelings as a composite, other areas of literature provide some insight with their comparisons of women and men on individual aspects of internal consent—without conceptualizing these aspects as consent. For example, there is evidence that—regarding sexual activity—men report higher levels of physical response (Milhausen, Sanders, Graham, Yarber, & Maitland, 2010), arousal (Chivers, 2005), and want (Hatfield, Sprecher, Pillemer, Greenberger, & Wexler, 1989). Based on these gender differences at the aggregate level, men’s internal consent feelings may be ignored and disregarded.

**Other individual differences.** While gender has been the predominantly assessed between-person difference regarding sexual consent, other individual differences have received attention—albeit limited. For example, a few studies have investigated how age, race/ethnicity, and sexual orientation might be related to sexual consent. Comparisons across these groups are unsurprisingly infrequent given that the sexual consent literature heavily relies on White college-aged heterosexual samples (Muehlenhard et al., 2016; Willis, Blunt-Vinti, & Jozkowski, 2019).

There is some evidence that sexual consent is associated with age. In one study, Walsh, Honickman, and colleagues (2019) found that older college students reported elevated feelings of physical response and were more likely to use passive behaviors to communicate their consent

than their younger peers. And in a sample that was more diverse regarding age, participants aged 18–25 reported higher internal consent scores for each of the subscales compared with those who were older than 45, and younger participants in that sample were also more likely to use explicit nonverbal cues to communicate their consent (Willis, Blunt-Vinti, & Jozkowski, 2019). The internal consent subscale that was most negatively associated with age (i.e., physical response) included questions regarding feeling vaginally lubricated and lustful—sexual function constructs that are generally negatively associated with age (Chedraui, Perez-Lopez, San Miguel, & Avila, 2009; Hayes & Dennerstein, 2005). Therefore, the age differences seen on the internal consent scale may reflect changes in sexual function associated with increasing age.

Findings are similarly limited regarding the association between sexual consent and race/ethnicity.<sup>2</sup> While Walsh, Honickman, and colleagues (2019) did not report any evidence that internal consent might vary by race/ethnicity, Willis et al. (2019) found that Hispanic participants experienced elevated levels of physical response, safety/comfort, and readiness compared with non-Hispanic White participants; Black participants similarly had higher scores for safety/comfort than White participants. It is important to note that the latter study was better powered to detect differences based on race/ethnicity. For external consent communication, one study found that Black participants were less explicit and verbal in their consent cues than White participants (Walsh, Honickman, et al., 2019); somewhat consistently, the other reported that Black and Hispanic participants were more likely to use implicit nonverbal cues compared with non-Hispanic White participants (Willis, Blunt-Vinti, & Jozkowski, 2019). In their sample of Hispanic participants, Stephens, Eaton, and Boyd (2017) found that nonverbal consent communication prevailed, followed by implicit verbal and explicit verbal cues. Overall, these

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<sup>2</sup> The racial/ethnic identities included in most of the existing empirical studies on sexual consent only reflect Canadian or US American populations.

studies show similar trends across race/ethnicity but also point to potentially meaningful nuances between identities.

The academic literature on sexual consent predominantly reflects heterosexual interactions (Beres et al., 2004; Muehlenhard et al., 2016). Though many samples might contain participants who are sexual minorities, these participants are regularly excluded—likely due to their small numbers and assumptions that consent varies by sexual orientation (e.g., Higgins et al., 2010). However, Walsh, Honickman, and colleagues (2019) did not find that any of the internal or external consent subscales were related to sexual orientation (i.e., heterosexual, bisexual, same sex). Similarly, Beres et al.’ (2004) findings regarding women who have sex with women and men who have sex with men were “consistent with previous research that has studied heterosexuals...in that [their] participants reported using nonverbal behaviors more frequently than verbal behaviors as indicators of consent” (p. 483). While it seems that differences in sexual consent based on sexual orientation are limited, the measures used in each of these studies were developed in heterosexual samples.

Investigations of between-person differences—predominantly based on gender—regarding sexual consent have dominated the surge in published research on this topic over the past decade. While I believe that this is an important line of work (and one that I will also continue to pursue), there remains a need to advance current understandings of sexual consent by examining within-person variability—especially considering evidence (e.g., Willis & Jozkowski, 2019) that a person’s willingness to engage in sexual activity is contextual and depends on the particulars of a given sexual encounter.

## **Contextual Variability of Sexual Consent**

While individual differences regarding sexual consent have been examined with somewhat regularity, little is known regarding the within-person variability of internal or external sexual consent. However, previous studies on how sexual consent varies by context between people provide initial evidence that a person's consent can depend on the situation. For example, researchers have consistently shown that sexual consent can vary by relationship status and type of sexual behavior. Other examples of contexts relevant to consent include alcohol consumption and social versus private setting.

**Relationship status.** Sexual consent can vary based on the interpersonal context between people (e.g., a committed romantic or sexual relationship). It likely isn't surprising that sexual consent might look different for people on a first date versus people who have been "friends with benefits" for several months versus people who have been married for years. The first evidence of the association between relationship status and sexual consent came from the literature on nonconsensual sex. In a pair of experimental vignette studies, the more intimate a romantic partnership was defined between two characters, the less severe participants rated the sexual assault and the more they blamed the victim (Monson, Langhinrichsen-Rohling, & Binderup, 2000; Shotland & Goodstein, 1992). In these two studies, participants may have thought that sexual consent was assumed because the characters were in a committed relationship and had already had sex before.

Indeed, the history of a sexual relationship influences whether people perceive it permissible for one partner to assume another is interested in and consenting to sexual activity (Beres, 2014; Humphreys & Brousseau, 2010; Muehlenhard et al., 2016; Righi et al., 2019). Using vignettes, Humphreys (2007) manipulated relationship status (i.e., first date, dating three

months, married two years) and also included matching descriptors of sexual precedent—or the sexual history between two partners (i.e., never, a few occasions, fairly regularly, respectively). In that study, the researcher found that relationship history influenced perceptions of sexual consent in scenarios where consent was purposely ambiguous. Of note, there was more agreement with the phrase “sexual consent is okay to assume in this context” as relationship duration increased and less agreement with the phrase “consent should be given before any kind of sexual activity began” (p. 310). Even though the potential consent communication cues—all of which were nonverbal—presented in each condition were exactly the same, scenarios that indicated a more intimate relationship with a partner were perceived as clearer in sexual intent, more acceptable, less in need of additional precautions, and overall more consensual (Humphreys, 2007).

While consent communication is emphasized early on in a sexual relationship, people might believe that increased sexual experience with a partner may decrease the perceived need to communicate consent explicitly. For example, Muehlenhard et al. (2016) claimed that people presume “nonconsent” prior to being in a sexual relationship, waiting for some indication that a potential partner is willing (p. 9). But these researchers argued that a shift takes place within the context of a committed sexual relationship: consent becomes the standard—and is thus assumed—until their partner communicates their refusal (Muehlenhard et al., 2016). Evidencing this transition, Willis and Jozkowski (2019) found that, if participants were in a new sexual relationship, they tended to rely exclusively on active communication cues—whether verbal or nonverbal—to determine sexual consent. However, participants with increasingly established relationships started assuming consent based on contextual cues, such as perceiving their relationship status or feelings of love for their partner as indicators of consent. Indeed, simply



being in a committed relationship with somebody can be perceived as a contextual cue for consent (O’Byrne, Hansen, & Rapley, 2008). The shift in the way people think about sexual consent may start shortly after the first time people engage in sexual activity but change gradually (Willis & Jozkowski, 2019). Further, this resulting change in consent conceptualization is likely a natural shift and not explicitly addressed within a sexual relationship—but might implicitly develop as the precedent for sexual behavior within a relationship becomes more established (Muehlenhard et al., 2016).

People’s romantic relationship status with their sexual partners can also influence the type of consent communication used (Beres, 2010, 2014; Humphreys & Brousseau, 2010; Humphreys & Herold, 2007; Muehlenhard et al., 2016). However, previous research on the association between romantic relationship status and external consent is mixed and less straightforward. Regarding attitudes and perceptions, people think that willingness to engage in sexual activity should be communicated more explicitly between casual or novel partners than when the partners are in a committed relationship (Humphreys, 2007; Muehlenhard et al., 2016). But research on people’s sexual consent behaviors found that those in committed relationships are more likely to use verbal consent cues than those in casual relationships (Marcantonio et al., 2018; Willis, Hunt, et al., 2019). This discrepancy between attitudes and behaviors might be explained by researcher suggesting that people consider nonverbal or implicit sexual consent cues to be effective and normative in casual sexual relationships (Beres, 2010; Curtis & Burnett, 2017) . Another explanation could be that people in committed relationships—compared with people in new or casual relationships—may be more comfortable explicitly and verbally communicating their consent because they feel confident interpreting a romantic partner’s signals and do not fear rejection from them (Foubert et al., 2006).

Regarding internal consent, people in committed relationships consistently report elevated feelings of consent compared with people in new or casual relationships. Walsh, Honickman, and colleagues (2019) found that increasing levels of intimacy with one's partner was associated with higher levels of internal consent feelings; dating partners and significant others had the highest scores, followed by friends, acquaintances, and people just met. This trend was significant for each of the subscales: physical response, safety/comfort, arousal, agreement/want, and readiness. In a study that compared first-time, casual, and serious partners, only safety/comfort, agreement/want, and readiness were associated relationship status; again, more intimate relationships had higher levels of these internal consent feelings (Marcantonio et al. (2018). Finally, Jozkowski et al. (2014) found that relationship status (i.e., single versus in a relationship) was only associated with feelings of safety/comfort.

**Type of sexual behavior.** Previous research has indicated that a highly relevant context to consider for within-person variability of sexual consent is type of sexual behavior (Hall, 1998; Marcantonio et al., 2018). Indeed, there is an established script that consent doesn't need to be explicitly communicated for sexual behaviors that are lower-order according to sexual hierarchies established by previous research (e.g., Sanders et al., 2010). For example, the proportion of students who believe that explicit consent is necessary increases as the perceived level of intimacy of the sexual behavior increases (Humphreys, 2007; Jozkowski, Peterson, et al., 2014). People's consent communication behaviors reflect this belief. In a recent study (Willis, Hunt, et al., 2019), explicit verbal cues were reported with increasing frequency for the following sexual behaviors: intimate touching (22.0%), oral sex (43.5%), vaginal-penile sex (57.4%), and anal sex (80.1%). In addition to type of sexual behavior, direction matters. Regarding receptive oral sex, not responding or refusing composed 24.1% of the consent communication cues people

reported in one study; this *no response* signal made up only 6.3% of consent cues for performative oral sex (Willis, Hunt, et al., 2019). Not only is the type of sexual behavior associated with sexual consent, but the extant literature also indicates that type of sexual behavior can moderate the associations between sexual consent and (1) gender and (2) relationship status.

First, the relationship between gender and external consent communication can differ depending on the type of behavior. Hall (1998) found that men were more likely than women to communicate their consent either verbally or nonverbally for genital touching and breast stimulation; however, people in that sample communicated their consent for vaginal-penile intercourse and oral sex similarly across genders. And in a recent content analysis of pornographic films, male characters were more likely to model explicit verbal cues than female characters for oral sex and anal stimulation but not vaginal-penile intercourse or genital touching (Willis, Canan, Jozkowski, & Bridges, 2019).

Second, the association between relationship status and sexual consent communication also varies by type of sexual behavior. Marcantonio et al. (2018) did not find significant associations between relationship status and sexual consent communication for oral sex; however, they did find that internal consent feelings and external consent communication varied by relationship status for vaginal-penile intercourse. Participants in serious relationships had higher scores for safety/comfort, agreement/want, and readiness for vaginal-penile intercourse than those with first-time partners—but not for oral sex. Also, for vaginal-penile intercourse only, participants with a serious partner were more likely than those with a first-time partner to use nonverbal cues to communicate their willingness to engage in and were more likely to use verbal cues or initiate a behavior.

These findings regarding how sexual consent varies based on the type of sexual behavior were some of the first to indicate that a person's willingness is not felt or communicated the same across contexts (e.g., Hall, 1998; Humphreys, 2007; Jozkowski, Peterson, et al., 2014). And it is likely that sexual consent is nuanced further still. For example, even if people on average experience consent differently for vaginal-penile intercourse than they do for other behaviors, previous studies have not examined whether internal or external consent regarding this sexual behavior varies from day to day—or tried to identify other contexts that influence a person's experience of consent.

**Other contexts.** While relationship status and type of sexual behavior have been the focus of much research on contextual factors relevant to sexual consent, other contexts have also been postulated as important to consider. For example, a few studies have investigated how alcohol and setting might be related to sexual consent.

While alcohol is brought up in many definitions regarding sexual consent, there is no consensus regarding the point at which intoxication becomes relevant (Muehlenhard et al., 2016). Even at the point that people are intoxicated enough to experience impaired judgment, most show confidence in their ability to consent to sex (Drouin et al., 2019). However, there is evidence that alcohol—its presence or consumption—is an important context to consider when assessing consent. For example, Jozkowski and Wiersma (2015) found that recent alcohol drinking before sexual activity was negatively associated with internal feelings of consent (i.e., safety/comfort and readiness). Further, the influence of alcohol on a person's perceptions of sexual consent can vary by gender: women tend to view alcohol as a “social lubricant,” while men might think that a woman drinking alcohol desires sex—or even that, by accepting a drink, is consenting to sex (Jozkowski et al., 2018).

The setting in which the consent process takes place is another contextual factor that can be relevant for sexual consent. The primary distinction that has been made by previous research is between social and private settings. For example, Jozkowski et al. (2018) found that behaviors like making eye contact, flirting, or texting in a social context could be perceived as consent by men or sexual interest by women. Men, especially, might experience disappointment, confusion, or anger if such cues in a public setting did not lead to sexual activity in a private setting. Further, the transition from a public to private setting can itself be perceived as a context that indicates sexual consent (Beres, 2010; Beres, Senn, & McCaw, 2014; Humphreys, 2004).

While these contextual factors give insight into the potential within-person variability of sexual consent, they are typically assessed at the event-level. This means that most conclusions made by previous research are based on between-person differences at a moment in time. For example, researchers assessing the association between sexual consent and type of sexual behavior or sexual consent and alcohol consumption have not tracked people over time to assess how their internal consent feelings or external consent communication might vary from context to context. Because feelings and communication of willingness to engage in sexual activity likely vary from context to context (Willis & Jozkowski, 2019), directly investigating within-person variability can elucidate the nuances of sexual consent beyond group differences.

### **Within-Person Variability of Sexual Consent**

Sexual consent is not simple. Rather, it is fluid and complex—potentially varying from context to context. Building on the cross-sectional designs of the previously reviewed studies regarding between-person variability (based on individual differences or contextual factors), researchers have employed methodologies that gather multiple time points of data. In doing so,

researchers consequentially have the potential to track day-to-day variations in participants' experiences of sexual consent.

Inspiring this dissertation study, Willis and Jozkowski (2019) conducted a daily diary study to assess if and how sexual consent changed from day to day. Each day for thirty days, participants reported whether they had engaged in partnered sexual activity that day. On days that participants were sexually active with another person, they reported whether they communicated their consent and how. By obtaining multiple data points, they were able to provide evidence that the way sexual consent is conceptualized and communicated varies not only between people but also within people and across experiences. Many participants in Willis and Jozkowski's (2019) study conceptualized sexual consent differently from day to day. For example, a 20-year-old female said she knew her sexual interactions one day were consensual because "Both parties verbally consent," but on another day during the study she did not rely on active communication to interpret consent: "He's my boyfriend. No one said no. It felt right" (p. 1730). Similarly, another participant, an 18-year-old male, used verbal communication to perceive consent on one day (i.e., "My girlfriend asked if she could get me off and I said yes") and made assumptions on a different day (i.e., "I just kind of did it because she seemed ok with it") (p. 1730).

How participants in Willis and Jozkowski's (2019) study conceptualized sexual consent clearly varied by the particular context; however, there were not data presented regarding how internal or external consent might vary by the day-to-day contexts in which the sexual encounters took place. Rather, open-ended responses were coded based on whether people relied on active communication or context to perceived sexual consent across different sexual encounters. Other studies have similarly collected data that could likely illuminate aspects of within-person

variability of sexual consent (O'Sullivan & Allgeier, 1998; Vannier & O'Sullivan, 2011), but these data have been presented as aggregated figures and thus the ability to assess within-person variability was eliminated. As such, there remains a need for research to expand the limited work on whether and how sexual consent can vary within people from day to day.

### **Purpose of the Dissertation Study**

As a reminder, sexual consent in this study is defined as one's voluntary, unimpaired, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context. This internal willingness can be externally communicated to others. Given these particulars, modern conceptualizations of sexual consent would benefit from empirical evidence regarding the extent that a person's internal consent feelings and external consent communication changes from day to day. To account for this variability, Willis and Jozkowski (2019) recommended that researchers use experience sampling methodology (ESM) in future work on sexual consent. As such, I conducted a two-part dissertation study with the intent to (1) develop and validate tools for assessing within-person variability of sexual consent and (2) provide estimates of the extent that people's internal consent feelings and external consent communication vary from day to day. Across these two studies, I used methodologies that are novel to the field of research on sexual consent: cognitive interviews, indexes of item-object congruence, and experience sampling methodology (see Table 2 for a review of methodologies used in previous studies to study sexual consent).

**Manuscript 1.** Measures of sexual consent have not been validated for ESM studies. Therefore, in *Developing Valid and Feasible Measures of Internal and External Sexual Consent for Experience Sampling Methodology*, I described the process of developing and validating ESM measures of sexual consent in three steps: (1) cognitive interviewing, (2) expert ratings,

and (3) pilot testing. In this manuscript, I presented evidence regarding the face validity, content validity, and construct validity of the items.

**Manuscript 2.** Then in *Assessing the Within-Person Variability of Internal and External Sexual Consent*, I used the measures described in Manuscript 1 in a 28-day ESM study designed to answer the following research questions regarding the within-person variability of sexual consent.

**RQ1:** What is the extent that internal and external sexual consent vary within people?

**RQ2:** Do internal feelings of consent predict people's type of consent communication cues across experiences as previous studies have shown to be the case at the event-level?



Table 1

*Definitions for “Sexual Consent” in Empirical Literature*

Article	Definition	Page
Artime & Peterson, 2015	“sexual consent involves both an external expression of willingness and an internal feeling of willingness, the latter of which may be matter of degree rather than a dichotomy”	571
Beres, 2010	*no explicit definition provided*	
Beres, 2014	“consent is some form of agreement to participate in sexual activity.” “Definitions vary based on nature of the agreement and who can enter in such an agreement.”	374
Beres et al., 2004	“a comprehensive understanding of sexual consent is lacking”	475
Beres, & MacDonald, 2015	“the free and voluntary agreement to participate in sexual activity”	419
Borges et al., 2008	“knowing or voluntary agreement to engage in sexual activity”	
Brady et al., 2018	“the legal definition of consent as resting on whether or not a complainant has the capacity to make a choice about sexual activity and whether this choice is made freely or if it is constrained in any way” “lack of agreed definition”	36
Burkett & Hamilton, 2012	*no explicit definition provided*	
Burrow et al., 1998	“consent can be thought of as a mental and/or verbal act”	1
Curtis & Burnett, 2017	a knowing, voluntary, and mutual decision among all participants to engage in sexual activity	210
Drouin et al., 2019	“one’s verbal or nonverbal communication of willingness to engage in sexual activity”	741
Fantasia, 2011	“implied sexual consent, which is consent that is assumed by the situation rather than negotiated clearly between partners”	121
Fantasia et al., 2014	*no explicit definition provided*	
Fantasia et al., 2015	“Sexual consent is most often defined as freely given verbal or nonverbal willingness to engage in sexual activity”	223
Goodcase et al., 2019	“Valid consent is explicit, affirmative, ongoing, mutual, and between competent individuals”	2
Gray, 2015	“requires that belief in such consent be reasonable. However, the only guidance given as to what is ‘reasonable’ is that reasonableness should ‘be determined having regard to all the circumstances.’”	337
Hall, 1998	*no explicit definition provided*	

Table 1 (Cont.)

Hermann et al., 2018	*no explicit definition provided*	
Hickman & Muehlenhard, 1999	“freely given verbal or non-verbal communication of a feeling of willingness to engage in sexual activity”	259
Higgins et al., 2010a	*no explicit definition provided*	
Higgins et al., 2010b	*no explicit definition provided*	
Hirsch et al., 2019	“agreement to engage in sexual activity”	28
Humphreys, 2007	“the freely given verbal or nonverbal communication of a feeling of willingness to engage in sexual activity”	307
Humphreys & Brousseau, 2010	“the freely given verbal or nonverbal communication of a feeling of willingness to engage in sexual activity”	420
Humphreys & Herold, 2003	“Because consent by definition requires an understanding of the sexual act requested (Hickman & Muehlenhard, 1999), the lack of foreknowledge regarding a partner’s intentions indicates that many sexual situations occur without explicit confirmation of consent.”	47
Humphreys & Herold, 2007	“Firstly, sexual consent requires knowledge. An individual must have a clear understanding of what she or he is consenting to, before consent can be considered legitimate. This requires knowledge about what the other person is expecting in terms of sexual behavior. Secondly, sexual consent is meaningless unless given freely, which means being free of coercion or undue influence.”	306
Hust et al., 2014	“Sexual consent is an individual’s verbal or nonverbal expression of agreement to engage in sexual activity”	281
Hust et al., 2015	“Sexual consent negotiation is a set of behaviors related to the process of establishing that consent exists for engaging in sexual activity. The presence of consent is necessary to establish that sexual activity is consensual.”	1370
Hust et al., 2017	*no explicit definition provided*	
Jozkowski, 2013	“the freely given verbal or nonverbal communication of feelings of willingness to engage in sexual activity”	260
Jozkowski, Peterson, et al., 2014	“consent is often not explicitly defined in the literature”	904
Jozkowski, Sanders, et al., 2014	“Muehlenhard theorized that consent could be defined in two ways: (1) as a mental act, by which consent as defined as an internal decision about one’s willingness to engage in sexual activity or (2) as a verbal act, meaning an expression of willingness to engage in sexual activity.”	438

Table 1 (Cont.)

Jozkowski et al., 2017	*no explicit definition provided*	
Jozkowski et al., 2018	freely given verbal or nonverbal communication of feelings of willingness to engage in sexual activity	117
Jozkowski & Peterson, 2014	*no explicit definition provided*	
Jozkowski & Wiersma, 2015	“Sexual consent is often defined as the freely given verbal or nonverbal communication of feelings of willingness to engage in sexual activity”	1
Lim & Roloff, 1999	“Consent constitutes knowing and voluntary agreement to engage in sexual activity. By ‘knowing,’ we mean that the person can understand that an agreement has been made. ‘Voluntary’ implies that agreement was freely given. ‘Agreement’ constitutes a commitment to engage in the action.”	3
Mandarelli et al., 2012	“comprehension and appreciation of information, as well as rational reasoning and expression of a choice, are all essential features in the area of sexual consent”	2
Marcantonio et al., 2018	“the verbal/behavioral or external conceptualization of consent—that is, how people communicate consent to a sexual partner consent can also be internal—the feelings people have that contribute to their decisions to consent”	1
O’Sullivan & Allgeier, 1998	“freely consented participation in sexual activity”	235
Peterson & Muehlenhard, 2007	“to want something is to desire it, to wish for it, to feel inclined toward it, or to regard it or aspects of it as positively valenced; in contrast, to consent is to be willing or to agree to do some thing”	73
Righi et al., 2019	“freely given verbal or non-verbal communication of a feeling of willingness to engage in sexual activity” “can only be present through a verbal indication of willingness to engage in sexual activity”	3
Satinsky & Jozkowski, 2015	“absence of a universal definition of consent” “Sexual consent has been defined as the freely given verbal or nonverbal communication of feelings of willingness to engage in sexual activity”	3
Shafer et al., 2018	“no uniformly accepted definition of sexual consent” but defined as... “explicit verbal consent and inferred consent, which requires an individual to interpret verbal and nonverbal communication”	S45
Silver & Hovick, 2018	“only an explicit, uncoerced, enthusiastic ‘yes’ should be considered consent”	506

Table 1 (Cont.)

Stephens et al., 2017	“research defines mutual consent as occurring when both people agree to have intercourse, with either being free to decide at any time that they no longer consent and want to stop the activity”	247
Tinkler et al., 2018 Vannier & O’Sullivan, 2011	“conscious and voluntary consent at each stage of sexual activity” *no explicit definition provided*	3345
Walsh, Honickman, et al., 2019	“the prevailing conceptualization of sexual consent suggests that it is composed of two distinct dimensions: the mental act of wanting or being willing to have sex (‘internal consent’) and the physical act of agreeing or consenting to sex (‘external consent’)” *no explicit definition provided*	1
Walsh, Sarvet, et al., 2019 Ward et al., 2012	“Communicating consent to sexual activity involves knowing and understanding that an agreement was made to engage in that activity through either verbal or nonverbal communication.”	747
Warren et al., 2015	“people freely communicating a willingness to engage in sexual activity”	898
Willis, Blunt-Vinti, et al., 2019	“one’s voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context”	37
Willis, Hunt, et al., 2019	“one’s voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context”	31
Willis & Jozkowski, 2019	“one’s voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context”	1723

*Note.* Data that was not available in the peer-reviewed publication is represented by “—.”

Table 2

*Methodology and Participant Demographics of Empirical Studies on Sexual Consent*

Article	Methodology	<i>N</i>	Age <i>M</i>	Age <i>SD</i>	Female (%)	White (%)
Arttime & Peterson, 2015	Online cross-sectional survey	189	26.50	8.10	100.00	83.60
Beres, 2010	In-depth unstructured interviews	*	*	*	*	*
Beres, 2014	Semi-structured interviews	21	†	—	52.38	95.24
Beres, 2014	Semi-structured interviews	34	—	—	55.88	70.59
Beres et al., 2004	Online cross-sectional survey	257	26.40	8.61	50.58	87.00
Beres, & MacDonald, 2015	Semi-structured interviews	5	†	—	100.00	—
Borges et al., 2008	Experimental design	220	19.50	—	65.45	—
Brady et al., 2018	Online cross-sectional survey	547	†	—	52.10	67.28
Brady et al., 2018	Workshop focus groups	18	†	—	55.56	94.44
Burkett & Hamilton, 2012	Semi-structured interviews	8	†	—	100.00	—
Burrow et al., 1998	In-person cross-sectional survey	385	23.00	—	69.35	50.40
Curtis & Burnett, 2017	Semi-structured interviews	31	—	—	54.84	—
Drouin et al., 2019	Field-based interviews	160	26.01	6.12	58.75	60.63
Fantasia, 2011	Semi-structured interviews	10	20.00	—	100.00	50.00
Fantasia et al., 2014	Focus groups	26	20.00	0.82	100.00	92.31
Fantasia et al., 2015	Online cross-sectional survey	925	20.60	2.00	100.00	75.24
Goodcase et al., 2019	Online cross-sectional survey	717	21.52	—	58.58	79.78
Gray, 2015	Semi-structured interviews	18	24.80	—	77.78	—
Hall, 1998	In-person cross-sectional survey	422	20.90	—	62.54	63.00
Hermann et al., 2018	Online cross-sectional survey	144	†	—	0.00	77.00
Hickman & Muehlenhard, 1999	In-person cross-sectional survey	67	19.00	—	58.21	88.10
Hickman & Muehlenhard, 1999	In-person cross-sectional survey	424	19.00	—	50.47	84.70
Higgins et al., 2010a	In-person cross-sectional survey	1883	20.20	1.60	61.82	75.62
Higgins et al., 2010b	In-person cross-sectional survey	*	*	*	*	*
Hirsch et al., 2019	In-depth interviews	151	†	—	58.00	50.00
Hirsch et al., 2019	Focus groups	~170	—	—	—	—
Humphreys, 2007	Experimental vignette methodology	415	19.70	4.04	64.00	—
Humphreys & Brousseau, 2010	In-person cross-sectional survey	372	20.12	3.18	72.31	—
Humphreys & Herold, 2003	Focus groups	*	*	*	*	*
Humphreys & Herold, 2003	Mailed cross-sectional survey	*	*	*	*	*
Humphreys & Herold, 2007	Focus groups	18	23.70	—	66.67	—
Humphreys & Herold, 2007	Mailed cross-sectional survey	514	20.80	1.58	64.20	—
Hust et al., 2014	Online cross-sectional survey	313	18.57	0.86	60.70	81.15
Hust et al., 2015	Online cross-sectional survey	313	18.60	0.85	60.38	80.83

Table 2 (Cont.)

Hust et al., 2017	Online cross-sectional survey	447	19.80	—	55.80	71.20
Jozkowski, 2013	In-person cross-sectional survey	640	20.44	1.59	67.81	80.16
Jozkowski, Peterson, et al., 2014	In-person cross-sectional survey	*	*	*	*	*
Jozkowski, Sanders, et al., 2014	In-person cross-sectional survey	*	*	*	*	*
Jozkowski et al., 2017	Semi-structured interviews	30	†	—	56.67	56.67
Jozkowski et al., 2018	Semi-structured interviews	*	*	*	*	*
Jozkowski & Peterson, 2013	In-person cross-sectional survey	185	21.24	8.89	54.05	82.16
Jozkowski & Peterson, 2014	In-person cross-sectional survey	*	*	*	*	*
Jozkowski & Wiersma, 2015	In-person cross-sectional survey	831	20.39	2.43	78.70	81.00
Lim & Roloff, 1999	Experimental vignette methodology	100	19.00	—	48.00	—
Mandarelli et al., 2012	Semi-structured interviews	85	38.20	12.20	58.82	100.00
Marcantonio et al., 2018	In-person cross-sectional survey	*	*	*	*	*
O'Sullivan & Allgeier, 1998	2-week weekly diary via mail	200	19.00	1.10	48.00	93.80
Peterson & Muehlenhard, 2007	In-person cross-sectional survey	339	19.00	—	100.00	81.42
Peterson & Muehlenhard, 2007	Follow-up interviews	*	*	*	*	*
Righi et al., 2019	Semi-structured interviews	33	17.00	—	60.61	—
Satinsky & Jozkowski, 2015	Online cross-sectional survey	237	28.85	10.25	100.00	84.81
Shafer et al., 2018	Online cross-sectional survey	370	20.59	1.75	0.00	68.80
Silver & Hovick, 2018	Online cross-sectional survey	182	21.18	2.35	67.03	81.00
Stephens et al., 2017	Semi-structured interviews	45	20.40	1.95	0.00	0.00
Tinkler et al., 2018	Experimental design	107	34.00	—	59.80	81.30
Tinkler et al., 2018	Experimental design	146	19.79	4.38	50.00	76.70
Vannier & O'Sullivan, 2011	21-day daily diary via mail	63	20.40	—	50.79	41.30
Walsh, Honickman, et al., 2019	Online cross-sectional survey	610	21.30	3.80	71.90	56.00
Walsh, Sarvet, et al., 2019	Online or in-person cross-sectional survey	1589	†	—	57.80	43.50
Ward et al., 2012	Online cross-sectional survey	462	18.26	1.53	59.90	95.00
Warren et al., 2015	Online or in-person cross-sectional survey	217	21.07	3.30	0.00	72.86
Willis, Blunt-Vinti, et al., 2019	Online cross-sectional survey	589	36.03	12.39	100.00	33.28
Willis, Hunt, et al., 2019	Online or in-person cross-sectional survey	707	20.15	2.23	58.27	80.06
Willis & Jozkowski, 2019	30-day daily diary via smartphones	84	20.10	1.26	79.80	77.40

*Note.* Data that was not available in the peer-reviewed publication is represented by “—.”

\*These articles presented results from a sample that was the same as another article's or not mutually exclusive.

†These articles described the age of their sample without providing a mean.

## CHAPTER 3

### RESEARCH METHODOLOGY

This dissertation study had two parts. First, because experience sampling methodology (ESM) studies often lack validated measures, I took multiple steps to ensure the validity of the ESM measures of sexual consent. Second, I conducted a 28-day ESM study using these measures.

#### **Developing the ESM Measures**

Because closed-ended ESM items related to sexual consent had not been developed, I designed and validated measures in three steps: (1) cognitive interviewing, (2) expert ratings, and (3) pilot testing. Due to the heightened burden on participants during ESM studies, it is important to balance feasibility with specificity when developing measures (Vachon, Erbas, & Dejonckheere, 2019). Figure 1 depicts this relationship, such that increasing the specificity of a study increases its validity only to a certain point. Consequently, measures used in this type of methodology tend to be brief—one common approach is to identify a handful of items from measures that have already been validated (e.g., Nezlek & Kuppens, 2008). Therefore, I consulted previous research related to measuring the primary constructs of interest: internal consent feelings and external consent communication.

**Internal consent feelings.** The Internal Consent Scale (Jozkowski, Sanders, et al., 2014) is the only measure of internal consent whose psychometric properties have been publicly validated. The robust measurement properties of the Internal Consent Scale have been replicated in multiple samples (Walsh, Honickman, et al., 2019; Willis, Blunt-Vinti, & Jozkowski, 2019). This measure asks participants to indicate the extent that they experienced particular feelings during their most recent partnered sexual activity:

People may have different feelings associated with their willingness to engage in sexual activity. Think about the last time you engaged in sexual activity with your most recent sexual partner. Please indicate the extent to which you agree or disagree that you felt the following during the last time you engaged in sexual activity.

Responses are recorded on a four-point Likert-type scale (“Strongly disagree” to “Strongly agree”).

This scale has 25 items and five factors: physical response, safety/comfort, arousal, agreement/want, and readiness. **Physical response** items are “I felt *rapid heart beat*,” “I felt flushed,” “I felt *eager*,” “I felt *lustful*,” and “I felt *erect/vaginally lubricated*.” **Safety/comfort** items are “I felt *secure*,” “I felt *protected*,” “I felt *safe*,” “I felt *respected*,” “I felt *certain*,” “I felt *comfortable*,” and “I felt *in control*.” **Arousal** items are “I felt *aroused*,” “I felt *turned on*,” and “I felt *interested*.” **Agreement/want** items are “The sexual activity itself felt *consented to*,” “The sexual activity itself felt *agreed to*,” “The sexual activity itself felt wanted,” “The sexual activity itself felt *consensual*,” and “The sexual activity itself felt desired.” **Readiness** items are “I felt *ready*,” “I felt *sure*,” “I felt *willing*,” and “I felt *aware of my surroundings*.”

**External consent communication.** Jozkowski, Sanders, and colleagues (2014) also validated an External Consent Scale. However, this measure does not exactly map onto Hickman and Muehlenhard’s (1999) conceptualization of external consent communication that has been used in several recent studies (e.g., Jozkowski et al., 2019; Willis, Blunt-Vinti, & Jozkowski, 2019). In this study, I used this latter classification, which maintains that people primarily communicate their consent using five different types of cues: explicit verbal, explicit nonverbal, implicit verbal, implicit nonverbal, and no response (i.e., not saying no; not resisting). Previous studies have used one-item measures to assess these types of consent cues (Willis, Blunt-Vinti, & Jozkowski, 2019).



I started with language and phrases used in these studies (i.e., explicit/direct, implicit/direct, verbal, and nonverbal). I then consulted dictionaries and thesauruses to determine other possible phrasings that might be preferred by participants. This process resulted in 20 total items, which asked participants about how they communicated their willingness to engage in sexual activity during their most recent partnered sexual activity:

People may have different ways of communicating their willingness to engage in sexual activity. Think about the last time you engaged in sexual activity with your most recent sexual partner. Please indicate the extent to which you used on the following forms of communication to determine sexual consent during the last time you engaged in sexual activity.

Responses were listed on the same four-point Likert-type scale used by the ICS (“Strongly disagree” to “Strongly agree”).

**Explicit** communication items were “I used *explicit* signals to communicate my consent,” “I used *clear* signals to communicate my consent,” “I used *direct* signals to communicate my consent,” “I used *obvious* signals to communicate my consent,” “I used *overt* signals to communicate my consent,” and “I used *straightforward* signals to communicate my consent.”

**Implicit** communication items were “I used *implicit* signals to communicate my consent,” “I used *subtle* signals to communicate my consent,” “I used *indirect* signals to communicate my consent,” “I used *unclear* signals to communicate my consent,” “I used *ambiguous* signals to communicate my consent,” “I used *covert* signals to communicate my consent,” and “I used *cryptic* signals to communicate my consent.”

**Verbal** communication items were “I used *verbal* signals to communicate my consent,” “I used *words* to communicate my consent,” “I used *phrases* to communicate my consent,” and “I used *sentences* to communicate my consent.”

**Nonverbal** communication items were “I used *nonverbal* signals to communicate my consent,” “I used *actions* to communicate my consent,” “I used *behaviors* to communicate my

consent,” “I used *gestures* to communicate my consent,” and “I used *body language* to communicate my consent.”

**Cognitive interviewing.** The ultimate goal of cognitive interviewing is to better understand how participants’ process and respond to items (Willis, 2004). By collecting a complete picture of an item’s performance, researchers can identify which items might function best before pilot testing them (Miller, Chepp, Willson, & Padilla, 2014). During cognitive interviews, participants respond to items in-person as typical survey respondents would. They then provide feedback via a structured set of prompts from the researcher that are designed to uncover participants’ underlying thought process related to responding to the item. This verbal probing technique is favored by cognitive researchers and there are many types of probes (Willis, 2004). The types of probes used in the current study included comprehension/interpretation, paraphrasing, specific, and general, and scripted verbal probes; the protocol that I followed is provided verbatim in the sections below.

The primary advantages of verbal probing over other cognitive interviewing techniques (e.g., think-aloud) are (1) maintaining control of the interview, eschewing irrelevant and non-productive discussion, and (2) relatively easy training of the participant because the probes do not typically differ fundamentally from the survey items. In fact, participants sometimes begin to expect the verbal probes and spontaneously offer their insight, which can make the exchange with the interviewer align more closely with think-aloud techniques (Willis, 2004).

However, disadvantages of verbal probing include artificiality and potential for bias. First, this cognitive probing technique has been critiqued for being stilted or unrealistic, which may call into question how meaningful the data gleaned from this tactic are (Willis, 2004). But it is important to note that cognitive interviews are intended to analyze the survey items—

researchers are collecting data on the survey items, not on the construct being measured. Second, the use of verbal probes that were written by the researcher have the potential to lead participants. This bias can be minimized by drafting and selecting probes that are not leading. For example, it would be better to ask participants, “Can you tell me why you chose this word?,” rather than, “Did you choose this word because it best captured the other words?”

Because the constructs related to internal consent feelings and external consent communication are associated and the items can reflect intricate distinctions, I decided to use concurrent probing rather than retrospective probing. Concurrent probing involves participants engagement in certain tasks in a particular order: (1) responding to survey items related to a particular construct, (2) responding to probes related those items, (2) responding to survey items related to the next construct, (4) responding to probes related those items, and so on. Retrospective probing involves participants completing all survey items before being probed by the interviewer. The concurrent approach tends to be preferred because it allows the researcher to inquire about cognitive processes within moments after they occurred—rather than waiting to do so after the entire survey, which risks the participant forgetting their thought patterns and potentially fabricating them to be able to respond to the interviewer’s retrospective probes (Willis, 2004). However, concurrent probing can prime or bias participants’ responses because they may be begin critically thinking about items more so once they are probed than if they completed all of the items before being probed.

*Sample.* I conducted 10 cognitive interviews with people who were at least 18 years old and in a committed sexual relationship at the time, which is typically sufficient to reach saturation (Willis, 2004). See Table 1 for a description of each participant’s sociodemographic information.

***Procedure.*** Participants met the interviewer in a lab setting or in a private study room at the university's library. They were provided consent forms, which they signed if they were willing to participate. All interviews were recorded on an iPhone using the Voice Recorder application. Each interview was structured as an iterative process in which participants first responded to items on a laptop using Qualtrics Survey Software for a specific aspect of sexual consent (e.g., consent feelings related to physical response; explicit verbal consent communication). See Appendix D for this survey. Participants were then asked probes related to how they responded to each set of questions. Within each aspect of sexual consent, the items were randomly presented. The first part of the interview investigated items measuring each aspect of internal consent feelings; the second part focused on external consent communication.

I took notes during the interviews and summarized each participant's responses in tables provided in Appendix A. Each column represents a different aspect of internal consent feelings or external consent communication. The first row indicates those items that participants liked best and thought best captured the other items within each aspect of sexual consent. The second row summarizes the primary rationale participants provided regarding why they preferred particular items. When relevant, the third row indicates items that participants did not like.

***Internal consent feelings.*** Participants responded to all items from the Internal Consent Scale. These items were presented by factor, and I asked a structured set of follow-up questions after each factor to determine which items should or should not be used to represent each of the five factors. First, I asked, "What did this series of feelings seem to be getting at?" Next, I asked, "Which of these words best captures [insert their answer to the first prompt]?" Then, I asked, "Can you tell me why you chose this word?" After that, I asked, "Are there any other words not listed here that you think would be better?" As an indicator of content validity, I asked, "Do

these words reflect being willing to engage in sexual activity?” To assess the ease with which participants could interpret and respond to each set of items, I asked, “Were any of these words weird?” and “Were any of these questions difficult to answer?” Finally, after repeating this process for all five factors, I repeated each of the five words they chose to best represent the others and asked, “Are there any other feelings that you associate with consenting to sexual activity?”

***External consent communication.*** Participants responded to 20 items that represented each of the four poles of the bivariate plane supported by previous research: explicit, implicit, verbal, and nonverbal. These items were presented by factor, and I asked a structured set of follow-up questions after each group to determine which items should or should not be used to represent each of the four types of communication. First, I asked, “For these words, how would you define the type of communication being described?” As an indicator of content validity, I asked, “What are examples of signals of sexual consent that are [insert their answer to the first prompt]?” Then I asked, “Which of these words best captures [insert their answer to the first prompt]?” After that, I asked “Can you tell me why you chose this word?” and “Are there any other words not listed here that you think would be better?” To assess the ease with which participants could interpret and respond to each set of items, I again asked, “Were any of these words weird?” and “Were any of these questions difficult to answer?” To determine whether the items might be worded better, I asked “Is there a better word for ‘signal’?” If participants were not able to come up with a replacement or if they only provided one or two words, I asked them to assess or rank in terms of preference the following words: cue, indicator, and sign.

**Expert ratings.** Expert ratings and values for the Index of Item-Objective Congruence (IIOC) are useful for providing an assessment of the content validity of items before pilot testing

(Turner & Carlson, 2003). The 45 items included in this IIOC assessment were the same as those from the cognitive interviews. I invited content experts and measurement experts to rate how well these potential items map onto our operational definitions for the various aspects of internal consent feelings and external consent communication. These reviewers were provided individual sets of operational definitions for objectives related to internal and external consent. Blind to each item's intended operational definition, the experts then rated how well each item measured each objective: 1 (clearly measuring), -1 (clearly not measuring), or 0 (degree that it measures the content area is unclear). Based on the formula and cutoffs provided by Turner and Carlson (2003), I calculated IIOC values to identify items that have higher content validity. The equation for the adjusted IIOC for multidimensional items is as follows:

$$I'_{ik} = \frac{(N)\mu_k - (N - p)\mu_l}{2N - p}$$

where  $I'_{ik}$  is the index of item-objective congruence for item  $i$  on a set of objectives  $k$ ,  $N$  = the number of objectives,  $p$  = the number of valid objective,  $\mu_k$  = the judges' mean rating of item  $i$  on the valid objectives  $k$ , and  $\mu_l$  = the judges' mean rating of item  $i$  on the invalid objectives  $l$ .

These values were used alongside the feedback from the cognitive interviews to select the item for each construct.

***Internal consent feelings.*** As noted, the Internal Consent Scale comprises five factors, and items' intended objectives for this study matched those provided by the factor analyses described in Jozkowski, Sanders, and colleagues (2014). I consulted with the creator of the Internal Consent Scale to write the operational definitions for these objectives (personal communication, Jozkowski, 2019). First, physical response was defined as feelings that are “associated with the body's automatic response to an engaging or exciting stimulus.” Second, safety/comfort was defined as feelings that are “associated with a calm assurance that everything

will be okay;” the definition continued to indicate that these feelings “reflect the absence of worry or distress.” Third, arousal was defined as feelings that are “associated with being titillated or drawn to engaging in sexual activity.” Fourth, agreement/want was defined as “aspects of a sexual encounter that make it seem to have been a willing and desired interaction between those involved.” Fifth, readiness was defined as feelings that are “associated with a confidence that one is prepared to engage in sexual activity.”

***External consent communication.*** As noted, the external consent items represented four types of communication. I consulted with the creator of the External Consent Scale to write the operational definitions for these objectives (personal communication, Jozkowski, 2019). First, explicit cues were defined as “forms of communication that people will most likely understand at face-value;” the definition continued to indicate that “there won’t be much subtext or hinting involved with these types of signals.” Second, implicit cues were defined as “forms of communication that people may or may not understand at face-value; the definition continued to indicate that “there will likely be subtext or hinting involved with these types of signals.” Third, verbal cues were defined as “forms of communication that rely on words;” the definition continued to note that “people can say things to express an intention or desire.” Fourth, nonverbal cues were defined as “forms of communication that do not rely on words;” instead, the definition continued to clarify that “people can do something or move part of their body to express an intention or desire.” The operational definitions for explicit and implicit cues also indicated that each of these cues may be verbal or nonverbal; similarly, the operational definitions for verbal and nonverbal cues also indicated that each of these cues may be implicit or explicit.

## Conducting the ESM Study

I then administered the items that were selected to measure each of the types of internal and external sexual consent. Per recommendations by Vachon et al. (2019), the proposed ESM protocol described below was first pilot tested for seven days before conducting the 28-day study. The pilot study provided evidence for the construct validity of measures; I also made adjustments to the protocol based on participant feedback from the pilot study.

**Sample.** I recruited people via a community newsletter, flyers posted in public settings, social media, and word-of-mouth to participate in an eligibility screener that was conducted via email. These methods of recruitment have been successful in this geographic area (i.e., midsize southern US college town) in previous studies (e.g., Marcantonio et al., 2018; Willis & Jozkowski, 2018). Eligibility criteria for the ESM study included (1) being at least 18 years old, (2) having daily access to a smartphone that supports the application used to deliver the daily surveys (i.e., LifeData), and (3) being sexually active. Similar to Willis and Jozkowski (2019), I defined “sexually active” as having had participated in sexual activity (e.g., making out, breast stimulation, manual genital stimulation, oral genital stimulation, vaginal-penile intercourse, or anal intercourse) on at least two days in the preceding week.

Because multiple time points of data are collected from participants every day of an ESM study and because greater resources are needed to conduct an ESM study, sample sizes for this methodology are typically smaller than other quantitative approaches. Unfortunately, formal power analysis procedures are lacking for ESM studies; most researchers currently base their projected sample sizes on previously published research (Vachon et al., 2019). A recent study that collected daily data on sexual consent for 30 days found that small to medium effect sizes could be detected when collecting similar data from a sample size of about 90 (Willis &



Jozkowski, 2019). Another recent ESM study that collected data from 100 people (10 times a day for 7 days) found small to medium effects with post hoc power estimated to be .77 (Sels et al., 2019). As such, I aimed to collect usable data from at least 100 participants. And as these ESM studies similar in design or topic to the present study, I expected high rates of compliance (e.g., 90%; Sels et al., 2019; Willis & Jozkowski, 2019). The final analytic sample was higher than expected ( $n = 113$ ), but the compliance rate was slightly lower than anticipated (84.0%).

**Procedure.** Recruitment materials included a link to a screener survey. Interested people who clicked on the recruitment link were directed to an introductory page that provided them with information about the study and screener questions using *Qualtrics* survey software. They then responded to screener questions and, if they remained interested in participating, provided their email address to be contacted regarding their eligibility. To be eligible, participants had to be at least 18 years old, sexually active, and have daily access to a device supported by iOS (e.g., iPhone) or Android (e.g., smartphone).

For those who were eligible, they were provided a link to the baseline survey via *Qualtrics* survey software. Participants filled out a baseline survey on a personal computer at a location of their choosing. The first page of this survey was the informed consent form, which notified them that by completing the survey they were indicating their consent to participate in the study. After reviewing the informed consent form, participants who wished to participate in the study clicked to the next page which began the online survey. Those eligible also received instructions for downloading the LifeData application<sup>3</sup> (lifedatcorp.com) onto their device.

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<sup>3</sup> The LifeData application can prompt participants to complete the daily surveys, time stamp the responses, and store the data. Due to potential sensitivity to the questions asked in the daily surveys, it is important to select an application that keeps anonymous records. The LifeData application does not record any identifying information from the participant's personal device.

Participants were provided a unique code to access the daily survey, which asked them several questions about their sexual behavior each day for 7 (pilot sample) or 28 (full sample) days. In the pilot study, the ESM survey was sent to participants four times a day using a semi-random sampling scheme (i.e., random sampling within four fixed windows every day). The specific windows were 7am–11am, 11am–3pm, 3pm–7pm, and 7pm–11pm. I designed the ESM survey to take approximately two minutes to complete. If participants engaged in sexual behavior since their most recent survey, they filled out the items related to sexual consent. If not, they filled out other items—eliminating incentive to falsely report a lack of partnered sexual activity to receive a shorter daily survey (Vachon et al., 2019; Willis & Jozkowski, 2019). Finally, after the daily survey phase, participants were invited to participate in an exit survey. This procedure was approved by the university’s institutional review board.

### **Measures.**

*Baseline survey.* Before beginning the ESM study, participants completed a survey, which included the following measures.

*Sociodemographic characteristics.* Participants reported several sociodemographic characteristics (e.g., age, gender, sexual orientation, education level, income level).

*Internal consent feelings.* Participants reported their internal consent feelings at their most recent partnered sexual activity. The Internal Consent Scale (Jozkowski, Sanders, et al., 2014) assesses internal feelings associated with sexual consent using 25 items across five factors: physical response, safety/comfort, arousal, agreement/want, and readiness ( $\alpha = .95$ ). Responses are recorded on a four-point Likert-type scale (“Strongly disagree” to “Strongly agree”). Higher values indicate stronger feelings of internal consent.

*External consent communication.* Participants also reported their external consent communication at their most recent partnered sexual activity. One-item measures have been used to assess each of the five different types of cues proposed by Hickman and Muehlenhard (1999): explicit verbal, explicit nonverbal, implicit verbal, implicit nonverbal, and no response. Using items from Willis, Blunt-Vinti, and Jozkowski (2019), I asked participants to indicate how sexual consent was communicated during their most recent partnered sexual activity using the following behaviors: (1) “I used direct verbal cues such as saying I want to have sex,” (2) “I used indirect verbal cues (like hints) such as asking my partner to get a condom,” (3) “I used direct non-verbal cues such as just starting to do the behavior (e.g., moving my partner's hands toward my genitals; starting to have sex),” (4) “I used indirect non-verbal cues such as making eye contact or touching my partner's arm, back, or legs,” or (5) “I let the behavior happen without resisting or stopping it.”

I also administered the four ESM items that were developed to measure external consent communication: (1) “I used straightforward signals to communicate my consent,” (2) “I used subtle signals to communicate my consent,” (3) “I communicated my consent verbally,” and (4) “I communicated my consent nonverbally,” Responses to each of these items were recorded on an 11-point scale (“Not at all” to “Entirely”).

*ESM survey.* Participants received this survey four times a day in the pilot study and three times a day in the full study. See Figure 4 for a flow chart of all proposed items.

*Mood.* During all surveys, participants were asked to rate (in randomized order) how happy, excited, relaxed, satisfied, angry, anxious, depressed, and sad they feel at the moment of the beep, using a continuous slider 11-point scale (“Not at all” to “Very much”). These items

have been used in previous ESM research (Kuppens, Allen, & Sheeber, 2010) and were selected because they represented all quadrants of the affective circumplex (Russell, 2003).

*Sexual activity.* Participants were asked, “Since the last beep, I engaged in sexual behavior with my partner.” There will be several response options, and participants checked all that applied (i.e., passionate kissing, touching genitals, oral sex, vaginal sex, anal sex, none). During surveys that participants indicated they had not engaged in partnered sexual activity, they were asked to indicate whether they had used pornography or masturbated since the last beep.

*Internal consent feelings.* During surveys that participants indicated they had engaged in at least one type of partnered sexual activity, they were asked five items about their internal consent regarding the highest order sexual behavior they engaged in. These items map onto the five factors identified by the ICS (Jozkowski, Sanders, et al., 2014): physical response (“I felt erect/vaginally lubricated”), safety/comfort (“I felt comfortable”), arousal (“I felt turned on”), agreement/want (“The sexual act itself felt consensual”), and readiness (“I felt ready”). Each of these were rated on an 11-point scale (“Not at all” to “Very much”).

*External consent communication.* During surveys that participants indicated they had engaged in at least one type of partnered sexual activity, they were asked four items about their external consent regarding the highest order sexual behavior they engaged in. These items map onto four dimensions identified by Hickman and Muehlenhard (1999): explicit (“I used straightforward signals to communicate my consent”), implicit (“I used subtle signals to communicate my consent”), verbal (“I communicated my consent verbally”), and nonverbal (“I communicated my consent nonverbally”). Each of these will be rated on an 11-point scale (“Not at all” to “Very much”).

*Alcohol use.* During surveys that participants indicated they had engaged in at least one type of partnered sexual activity, they were asked to indicate “Yes” or “No” for two items regarding alcohol use: (1) “I drank alcohol before I engaged in sexual activity” and (2) “The other person drank alcohol before we engaged in sexual activity.” During surveys that participants indicated they had not engaged in at least one type of partnered sexual activity, they were asked about alcohol use since the last beep.

**Analytic plan.** The purpose of Manuscript 1 was to develop valid measures of sexual consent that are appropriate for ESM studies (Table 2). It presented the previously described three-step process of item development. Cognitive interviewing was used to assess face validity, and expert ratings were used to evaluate content validity. To investigate the items’ construct validity, I conducted the following analyses using data collected from the pilot ESM study. Specifically, I assessed whether the ESM measures of sexual consent developed in the first part produced associations found in previous research (i.e., convergent validity) or the lack thereof (i.e., discriminant validity) at the event-level using data from a seven-day pilot ESM study.

The purpose of Manuscript 2 was to present data regarding the within-person variability of sexual consent (Table 3). Figure 5 provides a visual depiction of how sexual consent (e.g., external consent communication) might vary within a person—and also how this within-person variability can be different across people. On the x-axis is the verbal-nonverbal dimension of consent communication; on the y-axis is the explicit-implicit dimension. The squiggled lines provide illustrative examples of where on this bivariate plane participants could be over the course of the study. As can be seen, Participant 1 demonstrated far less variability than Participant 2. Specifically, Participant 1 primarily reported relying on communication cues that were explicit and nonverbal over most of their sexual experiences during the study period;

however, Participant 2 was not particularly likely to report relying on any particular type of cue across time points.

A series of models were fitted to the data to answer my research questions regarding such within-person variability of sexual consent—as well as associations between internal and external consent.

*What is the extent that internal and external sexual consent vary within people?*

First, to examine the extent that participants' reports of internal and external sexual consent significantly varied within people across experiences (RQ1), I calculated intraclass correlation coefficients (ICCs). These ICCs were indices of how much variation in participants' reports of internal consent feelings and external consent communication could be attributed to within- and between-person differences—indicating the extent that each type of variation was important for various feelings of consent and types of consent communication.

To gauge the amount of variation in the variables, models with no predictors at either level (i.e., fully unconditional) were fitted to the data. The fully unconditional multilevel model was:

$$\begin{aligned} Y_{ij} &= \beta_{0j} + r_{ij} \\ \beta_{0j} &= \gamma_{00} + u_{0j} \\ r_{ij} &\sim N(0, \sigma^2) \\ u_{0j} &\sim N(0, \tau_{00}), \end{aligned}$$

where  $Y_{ij}$  represents the outcome  $Y$  for person  $i$  (Level 1) nested in time point  $j$  (Level 2) and is equal to the sum of an intercept  $\beta_{0j}$  (Level 1) and unexplained variance or residual  $r_{ij}$  (Level 1). At Level 2, the intercept for Level 1,  $\beta_{0j}$ , becomes the outcome in a new equation comprised of another intercept  $\gamma_{00}$  (Level 2), which represents the average score across all participants and all valid time points included in the study, and unexplained variance or residual  $u_{0j}$  (Level 2). The Level 1 errors,  $r_{ij}$ , are assumed to be independent and normally distributed with a mean of 0 and

a variance of  $\sigma^2$ , and the Level 2 errors,  $u_{0j}$ , are assumed to be independent and normally distributed with a mean of 0 and a variance of  $\tau_{00}$ .

I tested this model for each of the internal consent feelings (i.e., physical response, safety/comfort, arousal, agreement/want, readiness) and the types of external consent communication (i.e., explicit, implicit, verbal, nonverbal). The relative contributions of between-person (Level 1) and within-person (Level 2) variability for each of these aspects of sexual consent were calculated as ICCs:

$$\rho = \frac{\tau_{00}}{\tau_{00} + \sigma^2},$$

where  $\rho$  represents the ICC,  $\tau_{00}$  is the variance at Level 2, and  $\sigma^2$  is the variance at Level 1. The ICC ranges from 0 to 1 and describes the proportion of the total variance that is due to between-person variability. The proportion of within-person variability may then be calculated as  $1 - \text{ICC}$ .

***Do internal feelings of consent predict people's type of external consent communication cues across experiences as previous studies have shown to be the case at the event-level?*** Second, to assess associations between internal and external consent accounting for within-person variability (RQ2), I tested multilevel models in which measurements were nested within time points, with random intercepts and fixed slopes (Schwartz & Stone, 1998). Between-person averages were retained in the model to account for variance due to between-person effects. Because time points were not equally spaced (due to semi-random sampling and the inconsistent nature of sexual activity), I used a continuous-time version of the first-order autoregressive error structure, which can handle unevenly spaced assessments (Schwartz & Stone, 1998). Effects were only modeled for time points in which participants engaged in sexual activity.

The Level 1 model tested the relationships between each of the internal consent feelings with the two different outcome variables measuring external consent communication. (i.e., explicit-implicit and verbal-nonverbal). The explicit-implicit outcome measure was created by averaging the score for “I used straightforward signals to communicate my consent” with the reversed score for “I used subtle signals to communicate my consent.” As such, higher scores indicated that participants relied relatively more on verbal cues to communicate their consent.

This Level 1 model was:

$$\text{VERB}_{ij} = \beta_{0j} + \beta_{1j}*(\text{PHYS}_{ij}) + \beta_{2j}*(\text{COMF}_{ij}) + \beta_{3j}*(\text{AROU}_{ij}) + \beta_{4j}*(\text{AGRE}_{ij}) + \beta_{5j}*(\text{READ}_{ij}) + r_{ij}$$

where  $\text{VERB}_{ij}$  represents the score for verbal-nonverbal consent communication for participant  $i$  at time point  $j$  and  $\beta_{0j}$  represents the mean score for verbal-nonverbal consent communication for time point  $j$ .  $\beta_{1j}$  represents the regression coefficient for the predictive effect of the physical response score for participant  $i$  at time point  $j$ ,  $\text{PHYS}_{ij}$ , on  $\text{VERB}_{ij}$ . The other  $\beta$  coefficients represent the other four types of internal consent feelings (i.e., comfort/safety, arousal, agreement/want, and readiness, respectively).

Similarly, the verbal-nonverbal outcome measure was created by averaging the score for “I communicated my consent verbally” with the reversed score for “I communicated my consent nonverbally.” I tested a model with the same predictors and explicit-implicit consent communication as the outcome:

$$\text{EXPL}_{ij} = \beta_{0j} + \beta_{1j}*(\text{PHYS}_{ij}) + \beta_{2j}*(\text{COMF}_{ij}) + \beta_{3j}*(\text{AROU}_{ij}) + \beta_{4j}*(\text{AGRE}_{ij}) + \beta_{5j}*(\text{READ}_{ij}) + r_{ij}$$

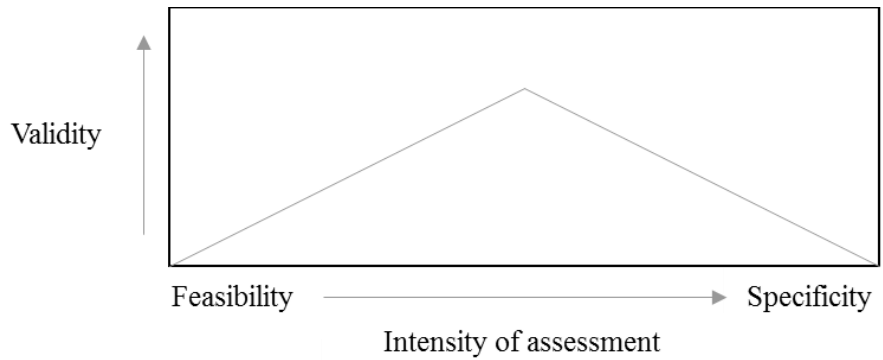
The Level 2 model did not include any additional predictors:

$$\begin{aligned}\beta_{0j} &= \gamma_{00} + u_{0j} \\ \beta_{1j} &= \gamma_{10} + u_{1j} \\ \beta_{2j} &= \gamma_{20} + u_{2j} \\ \beta_{3j} &= \gamma_{30} + u_{3j} \\ \beta_{4j} &= \gamma_{40} + u_{4j}\end{aligned}$$

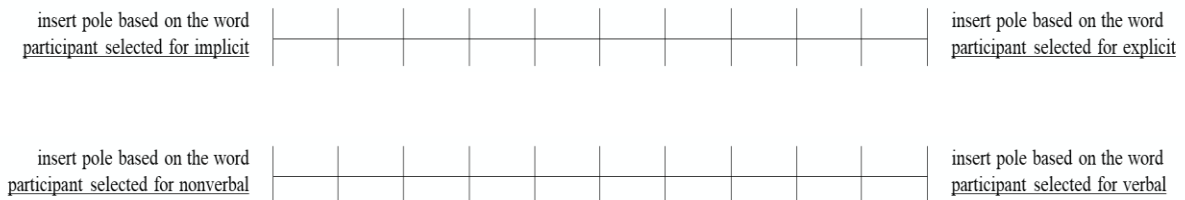


$$\beta_{5j} = \gamma_{50} + u_{5j} ,$$

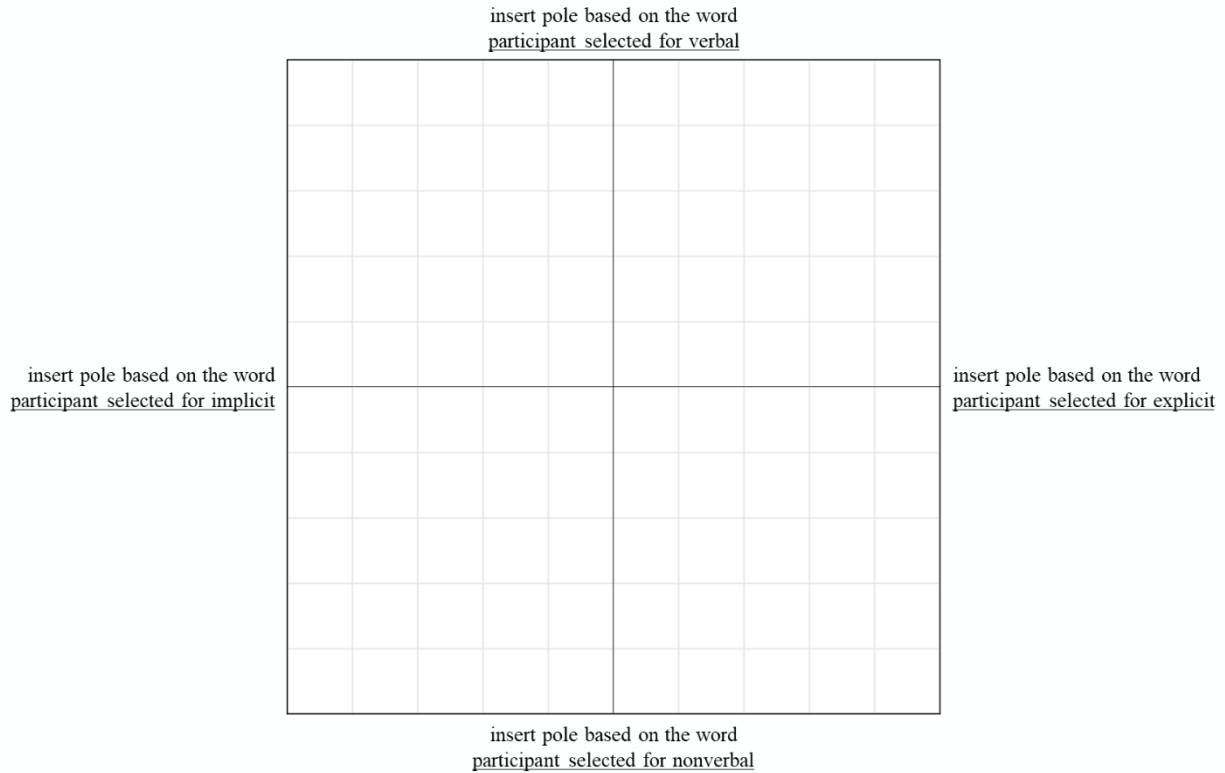
where  $\gamma_{00}$  represents the grand mean or overall model intercept,  $\gamma_{10}$  is the coefficient for the first predictor at Level 1, and  $u_{1j}$  is the random effect attributed to each time point  $j$  (i.e., within-person variability). The residual for each of the internal consent predictor variables were allowed to vary at Level 2. Together, the Level 1 and Level 2 models allowed for the assessment of between- and within-person effects regarding the associations between internal and external sexual consent.



*Figure 1.* Due to the heightened burden on participants during ESM studies, increasing the specificity of an ESM study increases its validity only to a certain point.



*Figure 2.* Unidimensional continua representing the implicit-explicit and nonverbal-verbal aspects of external consent communication. These diagrams were used to determine whether cognitive interview participants conceptualized the words they selected for each pole as being conceptually opposites.



*Figure 3.* Bivariate conceptualization that incorporates both the implicit-explicit and the nonverbal-verbal aspects of external consent communication. This diagram was used to determine whether cognitive interview participants could make sense of each quadrant and also in which quadrant they would place no response consent cues.

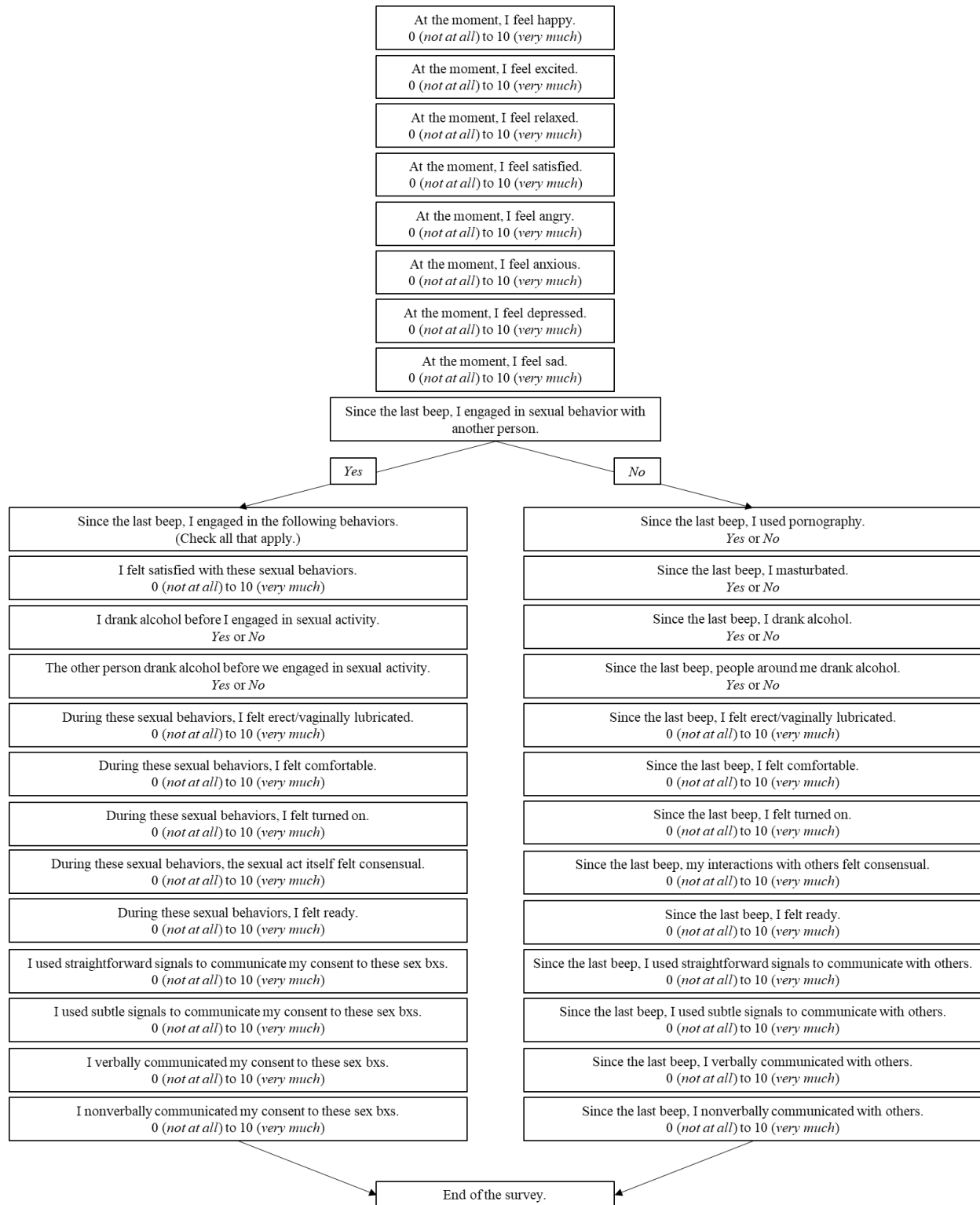
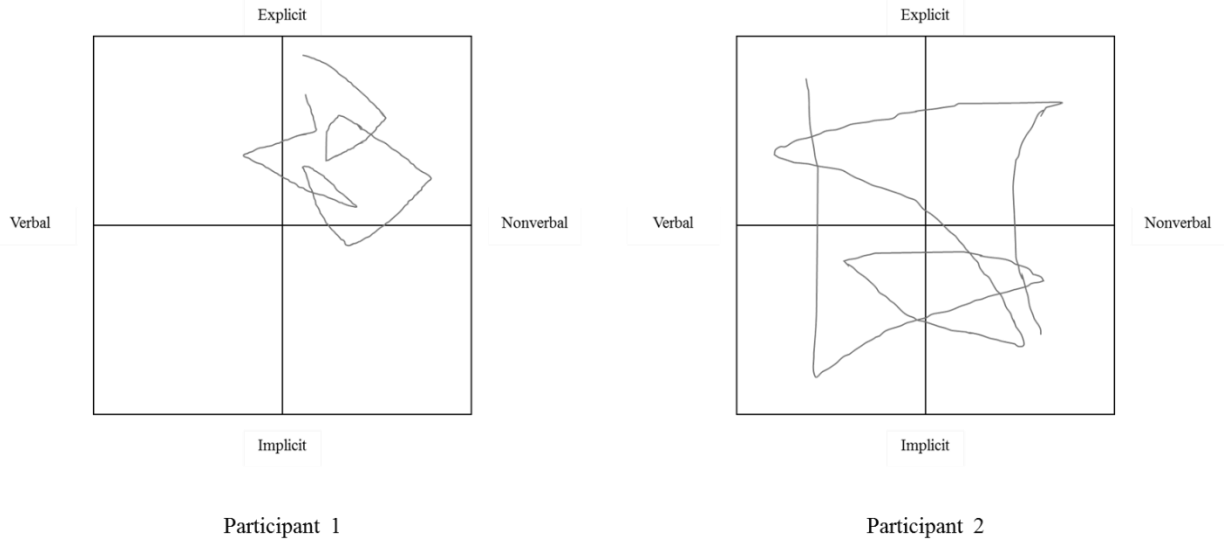


Figure 4. Proposed flow chart of ESM measures.



*Figure 5.* Plotted points depicting how hypothetical participants might vary in the extent that their external consent communication varies from one partnered sexual event to the next.

Table 1

*Sociodemographic Characteristics of Cognitive Interviewing Participants (n = 10)*

Participant	Sex	Age	Race/Ethnicity	Sexual Orientation	Relationship Status	Relationship Length	University Status
1	Female	27	Asian or Asian American	Heterosexual/ Straight	Engaged or married	6 years, 0 months	Not a student
2	Female	18	Asian or Asian American	Heterosexual/ Straight	In a relationship	0 years, 7 months	First year student
3	Male	28	Asian or Asian American	Heterosexual/ Straight	Engaged or married	3 years, 2 months	Graduate student
4	Male	32	Asian or Asian American	Heterosexual/ Straight	Engaged or married	0 years, 6 months	Graduate student
5	Female	20	White or European American	Heterosexual/ Straight	In a relationship	3 years, 0 months	Third year student
6	Male	39	White or European American	Heterosexual/ Straight	Engaged or married	16 years, 9 months	Not a student
7	Female	20	Hispanic or Latin American <i>and</i> White or European American	Bisexual	In a relationship	1 year, 5 months	Third year student
8	Female	19	White or European American	Bisexual	In a relationship	1 year, 8 months	Second year student
9	Male	27	Black or African American <i>and</i> White or European American	Heterosexual/ Straight	Engaged or married	4 years, 0 months	Third year student
10	Female with unexpected secondary sexual characteristics	20	White or European American	Queer	In a relationship	1 year, 11 months	Third year student

Table 2

*Manuscript 1 Analysis Plan*

Aim	Aim Description	Variables	Analytic Plan
1	Assess face validity of items based on the cognitive processes of participants from the population of interest	Internal consent feelings, external consent communication	Cognitive interview summaries
2	Assess content validity of items based on ratings by content experts and measurement experts	Internal consent feelings, external consent communication	Indexes of item-objective congruence
3	Assess the construct validity of the ESM measures by pilot testing them	Internal consent feelings, external consent communication	Bivariate associations at the event-level

Table 3

*Manuscript 2 Analysis Plan*

Aim	Aim Description	Variables	Analytic Plan
1	Assess the extent that internal and external consent vary within people	Internal consent feelings (ESM), external consent communication (ESM)	Intraclass correlation coefficients
2	Test whether internal consent feelings are associated with the verbal and explicit aspects of external consent communication across experiences	Internal consent feelings (ESM), external consent communication (ESM)	Multilevel models (i.e., time points nested within participants)

## CHAPTER 4

### DEVELOPING VALID AND FEASIBLE MEASURES OF SEXUAL CONSENT FOR EXPERIENCE SAMPLING METHODOLOGY

#### Introduction

In the academic literature, there are two primary definitions of sexual consent (Hickman & Muehlenhard, 1999; Muehlenhard et al., 2016). First, sexual consent has been conceptualized as an internal feeling of willingness to engage in sexual activity. A second definition indicates that sexual consent constitutes the use of words or behaviors to communicate to another person that they agree to engage in sexual activity; signals might be explicit or implicit. Based on these conceptual definitions, measures have been developed and validated to assess the various types of internal consent feelings and external consent communication (e.g., the Internal and External Consent Scales; Jozkowski et al., 2014).

Extant research indicates that sexual consent is complex and contextual—potentially varying from day to day (Willis & Jozkowski, 2019). However, to our knowledge, validated measures of internal and external sexual consent have only been developed for and used in retrospective cross-sectional studies, which are not well-equipped to account for within-person variability (Csikszentmihalyi & Larson, 2014). Validated measures are needed to bolster the credibility of findings regarding the within-person variability of sexual consent.

One potential approach to investigating the day-to-day variability of sexual consent is experience sampling methodology (ESM), which asks participants to provide systematic self-reports at multiple points throughout a day (Csikszentmihalyi & Larson, 2014). However, , researchers interested in using ESM to examine the within-person variability of sexual consent may lack the tools to do so; existing measure of sexual consent either have been designed for



lengthier cross-sectional surveys (e.g., Jozkowski et al., 2014) or have not endured a rigorous validation process (O’Sullivan & Allgeier, 1998; Vannier & O’Sullivan, 2011; Willis & Jozkowski, 2019). In the present study, we sought to develop valid measures of sexual consent that would be appropriate for ESM study designs.

### **Experience Sampling Methodology**

ESM (also referred to as ecological momentary assessment) refers to a range of study designs that can be used to examine the day-to-day variations in human experiences. By obtaining multiple data points from participants during each day of a study period, the goal of this methodology is to create a representative sample of people’s experiences (Csikszentmihalyi & Larson, 2014). In this way, ESM provides three notable advantages over traditional retrospective cross-sectional survey designs: reducing recall bias, increasing ecological validity, and assessing within-person variability.

First, by collecting data in the moment (or close to it), ESM studies lessen the need for participants to recollect and reconstruct their memories—processes that are prone to biases (Iida et al. 2012; Csikszentmihalyi & Larson, 2014). Even though people typically feel confident in their memories, evidence indicates that errors made in recalling past experiences reduce the validity and reliability of retrospective self-reported data (Shiffman et al., 2008). For example, people are more likely to remember negative events when they are in a negative mood (Clark & Teasdale 1982) or more easily recall past pain if they are in pain (Eich et al., 1985). And not only does the content people retrieve from their memory vary by context, but it is also retrieved in fragments and must therefore be reconstructed—a process that relies on cognitive heuristics that may introduce additional bias (Scollon et al., 2003). Specifically, these heuristics tend to conform to theoretical predictions, even if they are not consistent with actual experiences

(Shiffman et al., 2008). In the case of sexual consent, people may be more likely to recall that they used explicit verbal communication or that they experienced greater feelings of consent because they associate these with consensual sexual experiences (Willis, Hunt, et al., 2019).

Second, by collecting data in everyday settings, ESM studies improve the ecological validity of their findings (Csikszentmihalyi & Larson, 2014; Myin-Germeys et al., 2009). Because participants provide their self-reported data in their natural environment rather than a laboratory setting, responses to ESM surveys more accurately represent their natural experiences (Shiffman et al., 2008; van Berkel et al., 2017). While a laboratory setting benefits from experimental control, the extent that assessments in such environments generalize to participants' real-life experiences remains unclear (Stone et al., 2003). By asking people about their typical experiences in their typical environments, ESM is suitable for investigating everyday occurrences and allows researchers to avoid the bias inherent to other options for examining behavior outside of a laboratory (e.g., direct observational methods; Bolger & Laurenceau, 2013). In the case of sexual consent, collecting data in people's natural environments may be particularly useful because sexual behavior—and consequently consent communication—often occurs in private settings (Jozkowski, Manning, Hunt, 2018).

Third, by collecting multiple points of data for each participant, ESM studies can assess within-person variability (Csikszentmihalyi & Larson, 2014; Myin-Germeys et al., 2009). While some ESM studies aggregate these repeated measures to surmise a participant's typical state, researchers more often seek to capitalize on the temporal clarity afforded by repeated measures to assess day-to-day variations in experiences (Scollon et al., 2003; Shiffman et al., 2008). Collecting self-reports across multiple time points allows researchers to go beyond between-person comparisons and uncover nuances that might otherwise be masked by cross-

sectional correlations (van Berkel et al., 2017). In the case of sexual consent, preliminary data suggests that whether sexual consent was reportedly communicated varies within people and across experiences (Willis & Jozkowski, 2019).

### **Developing and Validating ESM Measures**

When developing ESM measures, researchers commonly try to minimize the number of items for each construct (Myin-Germeys et al., 2018; van Berkel et al., 2017). Using fewer items mitigates some of the burdensome and time-consuming qualities of ESM studies. The use of a few items is not a problem for ESM data because the repeated assessments serve as multiple indicators that reduce random measurement error (e.g., Csikszentmihalyi & Larson, 2014; Schimmack & Grob, 2000; Shiffman et al., 2008). Adding redundant items to reduce measurement error may actually reduce the quality of the data (Schimmack, 2003) or decrease rates of compliance (Stone et al., 2003). For these reasons, ESM measures are generally recommended to be as brief as possible.

While some researchers suggest that three items be used to measure each ESM construct (Shrout & Lane, 2011), using single items for constructs in ESM studies is widely adopted and typically deemed acceptable (Fisher & To, 2012; Myin-Germeys et al., 2018). Researchers typically make their own decisions about which items to include in a truncated scale because few measures have been validated for use in ESM studies (Ebner-Priemer & Trull, 2009). But a researcher's judgment—even if informed by previous factor analyses (e.g., Fisher & To, 2012)—does not adequately guarantee the utility of the items they select. Rather, for a single item to be considered acceptable for use in an ESM study, it must demonstrate face validity and content validity as well as associations with other variables as it should, suggesting construct validity (Fisher & To, 2012).

**Face validity.** Face validity refers to the extent that a measure appears to be related to a specific construct from the perspective of people who are not experts (Taherdoost, 2016). That is, a measure demonstrates face validity simply if its content is deemed relevant by participants who are providing their responses. While face validity is arguably the weakest form of validity (Taherdoost, 2016), the subjective aspects of a measure (e.g., readability, consistency of formatting, clarity of language) are particularly important to consider for ESM measures; items that might slightly annoy participants in a cross-sectional survey have the potential to significantly irritate them when encountered multiple times a day for weeks (Myin-Germeys et al., 2018; Stone, 2003).

One way researchers can design ESM measures that are face valid is to conduct cognitive interviews to assess proposed items (Shiffman et al., 2008). The ultimate goal of cognitive interviewing is to better understand how participants process and respond to items (Willis, 2004). During cognitive interviews, participants respond to items as typical survey respondents would. They then provide feedback via a structured set of prompts from the researcher that are designed to uncover participants' underlying thought process related to responding to the item (Willis, 2004). In developing their ESM measure, Myin-Germeys et al. (2018) conducted cognitive interviews with people who have encountered psychosis to more accurately grasp their lived experiences and ultimately improve the assessment of psychosis using ESM.

**Content validity.** Content validity refers to the extent that a measure reflects a specific construct from the perspective of people who are experts (Taherdoost, 2016). That is, a measure demonstrates content validity if its content is deemed relevant by judges who have considerable working knowledge relevant to the construct in question. By evaluating a measure's content validity in its developmental stages, researchers can identify items that best assess a particular

construct domain—as well as eliminate undesirable ones (Taherdoost, 2016). Again, because researchers typically employ a minimalistic approach to developing ESM measures due to the burden this methodology places on participants (Myin-Germeys et al., 2018; van Berkel et al., 2017), content validity is critical to ensuring that single items are able to represent a construct.

One way researchers can design ESM measures that are content valid is to obtain expert ratings for proposed items (Cheng et al., 2016). From these ratings, researchers are able to calculate scores that indicate how well items map onto their intended operational definition (e.g., indexes of item-objective congruence; Turner & Carlson, 2003). For example, in developing their ESM measure, Graham (2016) recruited experts in the field of rehabilitation science to rate how well their items measured constructs related to traumatic brain injury; these ratings provided evidence for deciding which items to retain in their ESM measure.

**Construct validity.** Construct validity refers to the extent that a measure functions as a proxy for a concept, idea, or behavior (Taherdoost, 2016). Measures that demonstrate construct validity should be moderately associated with constructs that are theoretically similar (i.e., convergent validity) and should have little or no association with conceptually unrelated constructs (i.e., discriminant validity). Thus, when distilling a measure to be used for ESM studies, researchers should ensure they select items that retain the original measure's convergent and discriminant validity (Stanton et al., 2002).

One way researchers can design ESM measures that preserve construct validity is to conduct pilot tests (Shiffman et al., 2008). For example, Versluis et al. (2018) conducted a pilot study to assess the construct validity of the ESM measure they developed to assess emotional awareness. Though small in sample size and short in duration (i.e., 25 participants over two

days), their pilot study provided preliminary evidence supporting the psychometric properties of their ESM measure (Versluis et al., 2018).

Further, given the taxing qualities of ESM protocols, piloting measures for this methodology in a group of people similar to the population of interest for several days is critical to assess their functionality and feasibility (Fisher & To, 2012). Using open-ended questions in the pilot study can provide insight regarding the ESM measure, and procedures should be adapted accordingly in future studies (Fisher & To, 2012).

### **Present Study**

Because researchers typically develop their own measures to investigate constructs of interest using ESM, Ebner-Priemer and Trull (2009) encouraged researchers to develop and use standardized ESM measures so that comparisons can be made across studies. To our knowledge, no ESM measures have been validated to assess sexual consent. Therefore, we sought to design measures that capture how sexual consent can vary from experience to experience. Specifically, we aimed to develop and validate measures of internal consent feelings and external consent communication that are feasible for ESM studies. Based on recommendations for designing measures appropriate for ESM (Fisher & To, 2012; van Berkel et al., 2017), we sought to achieve this overarching goal in two phases: (1) item selection from previously validated measures of internal and external consent based on cognitive interviews and expert ratings and (2) piloting items in a short ESM study.

The primary goal of Phase 1 was to select items from previous measures of sexual consent that demonstrated both face validity and content validity. Specifically, we sought to identify items used in retrospective cross-sectional research on sexual consent (e.g., Jozkowski et al., 2014; Willis et al., 2019) that best represented the constructs of interest. We operationally

defined these constructs based on seminal theoretical research on sexual consent (Hickman & Muehlenhard, 1999), reviews of the academic literature on sexual consent (Muehlenhard et al., 2016), and personal communications with the creator of the Internal and External Sexual Consent scales (Jozkowski, 2014). Table 1 presents the operational definitions we used to determine whether the items validly measured constructs related to internal consent feelings (i.e., physical response, safety/comfort, arousal, agreement/want, readiness) and external consent communication (i.e., explicit, implicit, verbal, nonverbal)—from the perspectives of participants (i.e., face validity) and experts (i.e., content validity).

The primary goal of Phase 2 was to assess the construct validity of items selected in Phase 1. At the event-level, internal and external sexual consent are related (Willis et al., 2019), and there are several other constructs conceptually related to both aspects of consent. Regarding internal consent, researchers have speculated that these feelings are conceptually associated with sexual satisfaction (Marcantonio et al., under review). Further, women report greater feelings of internal consent during sexual encounters that involved vaginal-penile sex compared with those that involved other sexual behaviors (e.g., genital touching or oral sex; Marcantonio et al., 2018). Regarding external consent, using explicit cues to communicate consent is conceptually associated with initiating sexual activity (Muehlenhard et al., 2016). And for people in committed relationships, consuming alcohol before or during sexual activity is not associated with internal consent feelings or external consent communication (Jozkowski & Wiersma, 2015). Therefore, we assessed whether the ESM measures of sexual consent developed in Phase 1 produced these same associations (i.e., convergent validity) or lack thereof (i.e., discriminant validity) at the event-level using data from a seven-day pilot ESM study.

A secondary goal of the pilot study was to assess the functionality and feasibility of the ESM measures of sexual consent. Specifically, we examined person-level descriptive statistics to assess whether these ESM measures could capture within-person variability of internal and external sexual consent. We also asked the pilot participants to provide feedback on the items and report their subjective reactions to participating in an ESM study on sexual consent.

### **Phase 1: Developing the ESM Measures**

#### **Method**

**Measures.** Regarding internal consent feelings, we assessed items included in the Internal Consent Scale (ICS), which asks participants to indicate how much they experienced a variety of feelings during their most recent partnered sexual activity (Jozkowski et al., 2014). We sought to identify one item to represent each of the five factors of this scale: physical response, safety/comfort, arousal, agreement/want, readiness. Response options were on a four-point Likert-type scale used by the ICS (“Strongly disagree” to “Strongly agree”).

Regarding external consent communication, we asked participants about how they communicated their willingness to engage in sexual activity during their most recent partnered sexual activity. To write these items, we started with language and phrases related to consent cues (i.e., explicit/direct, implicit/indirect, verbal, nonverbal) that have been used in previous studies (Hickman & Muehlenhard, 1999; Jozkowski et al., 2019; Willis et al., 2019). We then consulted dictionaries and thesauruses to determine other possible phrasings to provide participants; this process resulted in 20 total items. Response options for the cognitive interviews were listed on the same four-point Likert-type scale used by the ICS.

**Cognitive interviews.** To assess the face validity of items designed to measure internal and external sexual consent, we conducted cognitive interviews with a group of people similar to



the intended participants. Because the constructs related to internal consent feelings and external consent communication are associated and the items can reflect intricate distinctions, we used concurrent probing, which involves participants engagement in certain tasks in a particular order: (1) responding to survey items related to a particular construct, (2) responding to probes related those items, (3) responding to survey items related to the next construct, (4) responding to probes related those items, and so on (Willis, 2004). The concurrent approach tends to be preferred to retrospective probing because it allows the researcher to inquire about cognitive processes within moments after they occurred—rather than waiting to do so after the entire survey, which risks the participant forgetting their thought patterns and potentially fabricating their responses to the interviewer’s retrospective probes (Willis, 2004).

**Participants.** We conducted 10 cognitive interviews with people who were at least 18 years old and in a committed sexual relationship at the time of data collection, which is typically sufficient to reach saturation (Willis, 2004). On average, these participants were 25.0 years old ( $SD = 6.8$ ), ranging from 18 to 39. Regarding gender, five identified as women, 4 as men, and one as nonbinary. Regarding race/ethnicity, four participants identified as White or European American, four as Asian or Asian American, one as Hispanic or Latin American, and one as Black or African American. Regarding sexual orientation, seven participants identified as heterosexual, two as bisexual, and one as queer. Participants had been with their current sexual partner for an average of 46.8 months ( $SD = 57.8$ ), ranging from 6 to 201.

**Procedure.** Participants met the interviewer in a lab setting or in a private study room at the university’s library. They were provided consent forms, which they signed if they were willing to participate. All interviews were recorded on an iPhone using the Voice Recorder application. Each interview was structured as an iterative process in which participants first

responded to items on a laptop using Qualtrics survey software for a specific aspect of sexual consent (e.g., consent feelings related to physical response; explicit verbal consent communication). The first part of the interview investigated items measuring each aspect of internal consent feelings; the second part focused on external consent communication. Within each aspect of sexual consent, the items were randomly presented. These items were presented by factor, and the first author asked a structured set of follow-up questions after each factor to determine which items best demonstrated face validity and feasibility within each of the five factors (Table 2). The first author synthesized responses by tabulating which items each participant preferred or disliked for each aspect of internal and external sexual consent as well as their rationale for these preferences. This procedure for these cognitive interviews was approved by the university's institutional review board in its entirety.

**Expert ratings.** To assess the content validity of items designed to measure internal and external sexual consent, we obtained ratings from experts regarding how well the items mapped onto their intended operational definitions. Based on these expert ratings, we calculated indexes of item-objective congruence (IIOCs), which are useful for providing an assessment of the content validity of items before pilot testing (Turner & Carlson, 2003). The items included in this IIOC assessment were the same as those from the cognitive interviews.

**Procedure.** We invited three content experts (i.e., researchers who have published peer-reviewed research on sexual consent) and three measurement experts (i.e., researchers who have doctoral training in psychometrics) to rate how well these potential items map onto our operational definitions for the various aspects of internal consent feelings and external consent communication (Table 1). Blind to each item's intended operational definition, the experts rated how well each item measured each objective: 1 (clearly measuring), -1 (clearly not measuring),

or 0 (degree that it measures the content area is unclear). Based on the formula and recommended cut-off of .75 provided by Turner and Carlson (2003), we calculated IIOC values to identify items that have higher content validity.

## **Results**

Based on items adapted from previously validated cross-sectional measures of sexual consent, we present the findings from the cognitive interviewing and expert ratings. This evidence for face validity and content validity was used to select the item for each construct.

**Internal consent feelings.** This section reviews face validity and content validity of the items measuring five factors of the ICS: physical response, safety/comfort, arousal, agreement/want, readiness. Table 3 provides IIOC values for how well all internal consent items matched their intended operational definitions based on experts' ratings.

**Physical response.** Cognitive interview participants identified these items from the ICS as measuring physical reactions to sexual activity. The item that was consistently liked and not at all disliked was "I felt eager." Participants indicated that "eager" is a more comfortable word and that it can encompass the other feelings listed in this factor. While several participants thought that "lustful" might best capture the other words and is easy to understand, others were concerned that this word was more abrasive. Even though "erect/vaginally lubricated" was thought to be direct and obvious, these words might be too scientific or even seen as uncomfortable. Participants consistently disliked "rapid heartbeat" and "flushed"—associating the first with anxiety and the latter with embarrassment.

There was not an obvious item that the experts thought best represented physical response. "I felt eager" and "I felt lustful" were rated as clearly not measuring their intended operational definition. The other three items were in a similar range that was lower than Turner

and Carlson's (2003) recommended cut-off value of .75. Physical response was the most difficult aspect of sexual consent to reconcile across the cognitive interviews and expert ratings. Because "I felt erect/vaginally lubricated" was moderately endorsed by both groups, this item was selected to represent physical response.

**Safety/comfort.** Participants identified these items from the ICS as measuring feelings of security and being at ease. The item that was consistently liked and not at all disliked was "I felt comfortable." Participants tended to think that if a person is comfortable then they would experience all of the other feelings (e.g., safety, security). While "safe" and "secure" were also commonly endorsed, participants thought that "comfortable" may be more encompassing. For example, participants more often indicated that a person would likely be safe and secure if they were comfortable; however, they would not necessarily be comfortable if they were safe and secure. Some participants did not like "in control" or "protected" because these words made them think that the sexual activity was not equal or mutual.

The experts rated four items as mapping very well onto their intended operational definition for safety/comfort: "I felt secure," "I felt protected," "I felt safe," and "I felt comfortable." "I felt in control" was above the .75 cutoff but noticeably lower than the top four, and "I felt respected" was below this cutoff. "I felt certain" was rated as clearly not measuring its intended operational definition. Because "I felt comfortable" was consistently liked by cognitive interview participants and rated as clearly measuring this aspect of consent by the experts, this item was selected to represent safety/comfort.

**Arousal.** Participants identified these items from the ICS as measuring psychological or mental reactions to the prospect of sexual activity. This set of words was often contrasted with the first set, which participants identified as a more physiological arousal. Participants typically

liked both “I felt aroused” and “I felt turned on.” The reasons for personal preferences regarding these words were consistent. Participants who preferred “aroused” stated that this term is more physical, sexual, and clinical than “turned on;” according to some participants, these aspects might make it a better choice. Those that preferred “turned on” thought that this phrase meant sexually aroused but that it included more of a mental or emotional quality that “aroused” did not. For this reason, the latter might be the better option considering that participants generally identified this set of words as describing more of a psychological experience. Participants consistently disliked “interested”—citing that this word is too innocuous.

The experts rated two items above the .75 cutoff: “I felt aroused” and “I felt turned on.” While the first was rated as a better fit for this construct, its IIOC value was not markedly higher. “I felt interested” was rated as clearly not measuring its intended operational definition. Because cognitive interview participants identified “I felt turned on” as being more psychological than “I felt aroused” and experts rated it as clearly measuring this aspect of consent, this item was selected to represent arousal.

***Agreement/want.*** Participants identified these items from the ICS as measuring whether the sexual activity was mutual and everyone involved was okay with it. The item that was consistently liked was “The sexual activity itself felt consensual.” Participants thought that this phrase was clear and seemed the most mutual; they indicated that “consensual” includes both people, whereas the items “consented to” or “agreed to” sounded like they reflected a single person’s perspective. For these reasons, several participants actually disliked “consented to” and “agreed to.” Some also considered these less favorable terms to also be too legal.

All five items were above the .75 cutoff for the experts’ ratings. The two highest rated items were “The sexual activity itself felt agreed to” and “The sexual activity itself felt wanted.”

Additionally, “The activity itself felt consensual” was in a similarly high range. Because cognitive interview participants thought “The sexual act itself felt consensual” was the most mutual and the experts rated it as clearly measuring this aspect of consent, this item was selected to represent agreement/want.

**Readiness.** Participants identified these items from the ICS as measuring whether people were confident that they wanted to engage in sexual activity. Participants typically liked both “I felt sure” and “I felt willing.” Participants who preferred “sure” thought that this term was the strongest and best encapsulated the others; more often than not, “sure” was seen as more definite and less ambiguous than “willing.” “Ready” was also supported by some participants; however, there were not well-articulated justifications for selecting this term. Finally, some participants did not think that “aware of my surroundings” fit in with the other words because it made them think of being intoxicated or incapacitated. Although this conceptualization was consistent with the original intent during initial development, participants in the cognitive interviews did not find it to be an ideal assessment of readiness.

The experts rated only “I felt ready” above the .75 cutoff. “I felt sure” was well below this cutoff; “I felt willing” and “I felt aware of my surroundings” were both rated as clearly not measuring their intended operational definition. Because “I felt ready” was the only item that experts rated as clearly measuring this aspect of consent and cognitive interview participants endorsed it even though they provided stronger rationales for “I felt sure” and “I felt willing,” this item was selected to represent readiness.

**External consent communication.** This section reviews face validity and content validity of the items measuring four aspects of external consent communication: explicit,

implicit, verbal, and nonverbal. Table 4 provides IIOC values for how well all external consent items matched their intended operational definitions based on experts' ratings.

**Explicit.** Participants identified these items as measuring communication that is easy to interpret. The items that were consistently liked by participants were "I used straightforward signals to communicate my consent" and "I used clear signals to communicate my consent." Participants said that these terms were easy to understand and were not confusing. Several participants also liked "obvious;" however, almost as many disliked this word. Terms that people did not like included "overt," "unambiguous," and "explicit;" these words tended to require too much thought to interpret or were considered too scientific.

The experts rated five items above the .75 cutoff: "explicit signals," "clear signals," "unambiguous signals," "overt signals," and "straightforward signals." While "clear signals" was rated as a better fit for this construct, its IIOC value was not markedly higher. One item was slightly below this cutoff: "obvious signals," and "direct signals" was well below it. Because cognitive interview participants thought "I used straightforward signals to communicate my consent" was easy to interpret and experts rated it as clearly measuring this aspect of consent, this item was selected to represent explicit consent cues.

**Implicit.** Participants identified these items as measuring communication that is not effective and might be perceived as mixed signals. The items that were consistently liked by participants were "I used subtle signals to communicate my consent" and "I used unclear signals to communicate my consent." Several participants perceived a nuance regarding "subtle" that distinguished it from the other terms. Specifically, participants indicated that "subtle" communication demonstrates intent; in other words, people actively use "subtle" signals to communicate that they are willing. As such, "subtle" seemed to be more in line with consent

communication, while the other terms might be more likely to implicate ambivalence or nonconsent. Therefore, even though “unclear” was liked more than it was disliked, participants did not think that this term was as in line with consent as “subtle.” Participants consistently disliked “covert,” “cryptic,” “ambiguous,” and “implicit.” These words were seen as uncommon or unfamiliar, which resulted in participants spending too much time thinking about what they meant.

The experts rated four items above the .75 cutoff: “implicit signals,” “ambiguous signals,” “cryptic signals,” and “covert signals” One item was slightly below this cutoff: “subtle;” the other two items were well below it: “unclear signals” and “indirect signals.” Even though “I used subtle signals to communicate my consent” was slightly below the recommended IIOC cutoff, we selected this item for implicit consent communication because participants in the cognitive interviews consistently and clearly distinguished this term as better aligning with purposeful communication of a willingness to engage in sexual activity.

**Verbal.** Participants identified these items as measuring the act of communicating verbally. Participants were split regarding whether they preferred “I used verbal signals to communicate my consent” and “I used words to communicate my consent.” Those that liked “verbal signals” thought that it encompassed the other items and was not as restrictive; however, they had reservations regarding the exact wording. When asked how they might rewrite that item, multiple participants endorsed “I communicated my consent verbally.” Participants who liked “words” thought that it was the simplest and best captured the other terms. Participants consistently and strongly disliked “phrases,” and some did not think that “sentences” adequately captured how people communicate their consent verbally.



All four items were rated by the experts as above the .75 cutoff, and they all had the same IIOC value. Because “I communicated my consent verbally” was consistently liked by cognitive interview participants and its parallel wording was rated as clearly measuring this aspect of consent by the experts, this item was selected to represent verbal consent cues.

***Nonverbal.*** Participants identified these items as measuring the act of communicating nonverbally. There did not seem to be a consistently preferred item for this set of cues. Participants occasionally disliked “actions,” “behaviors,” and “body language” but, they thought these words were easy to understand and brought to mind specific examples of communication. But at the same time, some participants thought that these terms were too restrictive; for example, it was noted that these terms might not include facial expressions—which were identified as an important aspect of consent communication. As such, “nonverbal signals” was preferred as being the most encompassing. Again, participants noted they would like this item more if it read, “I communicated my consent nonverbally.” Participants did not like “gesture,” thinking it was an odd word and too ambiguous.

The experts rated three items above the .75 cutoff; “nonverbal signals” was rated the highest, and the other two items were closer to the cutoff: “gestures” and “body language.” One item was slightly below this cutoff: “actions,” and “behaviors” was well below it. Because “I communicated my consent nonverbally” was consistently liked by cognitive interview participants and its parallel wording was rated as clearly measuring this aspect of consent by the experts, this item was selected to represent nonverbal consent cues.

## Phase 2: Piloting the ESM Measures

In Phase 2, we piloted the items selected for their face validity and content validity as evidenced by the cognitive interviews and expert rating detailed in Phase 1.<sup>4</sup> With this pilot study, we aimed to provide evidence regarding the construct validity and feasibility of these ESM measures of sexual consent.

### Method

**Participants.** We piloted the ESM measures of sexual consent with 12 people, which is similar to samples sizes of previous ESM pilot studies (e.g., Cordier et al., 2016 [ $n = 6$ ]; Hare et al., 2016 [ $n = 9$ ]). On average, these participants were 32.5 years old ( $SD = 11.1$ ), ranging from 21 to 58. Regarding gender, 8 identified as women and 4 as men. Regarding race/ethnicity, nine participants identified as White or European American, one as Asian or Asian American, one as Hispanic or Latin American, and one as Black or African American. Regarding sexual orientation, eight participants identified as heterosexual, 3 as bisexual, and one as pansexual. Participants had been with their current committed sexual partner for an average of 67.5 months ( $SD = 75.1$ ), ranging from 3 to 231.

**Procedure.** We recruited pilot participants via social media to complete an eligibility screener. Interested people who clicked on the recruitment link were directed to an introductory page that provided them with information about the study and screener questions using Qualtrics survey software. To be eligible, participants had to be at least 18 years old, have daily access to a device supported by iOS (e.g., iPhone) or Android (e.g., smartphone), and be sexually active. Similar to Willis and Jozkowski (2019), we defined “sexually active” as having had participated

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<sup>4</sup> These items are listed in the measures section below.

in sexual activity (e.g., passionate kissing, oral sex, vaginal sex, anal sex) on at least two days in the preceding week.

Those who were eligible were provided a link to the baseline survey that was to be completed via Qualtrics survey software. Participants filled out a baseline survey that included sociodemographic items on a personal computer at a location of their choosing. After reviewing the informed consent form online, participants who wished to participate in the study clicked to the next page to begin the online survey. Those who completed the baseline survey received instructions for downloading the LifeData application<sup>5</sup> (lifedatcorp.com) onto their device.

The ESM survey was sent to participants four times a day using a semi-random sampling scheme (i.e., random sampling within four fixed windows every day). The specific windows were 9am–12pm, 12pm–3pm, 3pm–6pm, and 6pm–9pm. If participants engaged in partnered sexual activity since their most recent survey, they filled out the ESM measures of sexual consent as well as other items regarding the sexual encounter. If not, they filled out other items related to their relationship to make the survey length approximately equal on both tracks—eliminating incentive to falsely report a lack of partnered sexual activity to receive a shorter ESM survey (Willis & Jozkowski, 2019).

Finally, at the end of the seven-day ESM study period, pilot participants were invited to participate in an exit survey to provide their feedback on the ESM measures of sexual consent. Specifically, we asked participants to “Please indicate whether you thought any of [the statements you responded to in the daily surveys over the past week] did not make sense to you

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<sup>5</sup> The LifeData application can prompt participants to complete the ESM surveys, time stamp the responses, and store the data. Due to potential sensitivity of the questions asked in the ESM surveys, it is important to select an application that keeps anonymous records and allows the participant to prevent their data from being used if they wish. The LifeData application does not record any identifying information from the participant’s smartphone and permits participants to delete their data at any time during the study.

or sounded awkward.” In the exit survey, we also assessed the feasibility of assessing sexual consent using ESM measures by asking whether participating in this study was easy, confusing, interesting, frustrating, fun, and boring (on a five-point Likert scale from “strongly agree” to “strongly disagree”).

Based on the number of ESM surveys they completed, participants received up to a \$20 Amazon.com e-gift card for their participation. The procedure for this pilot study was approved by the university’s institutional review board in its entirety.

### **Measures.**

***Sexual behavior.*** Participants responded to “Since the last beep, I engaged in the following behaviors with my partner.” Response options included passionate kissing, genital touching, oral sex, vaginal sex, and anal sex; participants were instructed to select all that applied. For the purposes of this study, responses were dichotomized: 0 = sexual encounters without vaginal sex and 1 = sexual encounters with vaginal sex.

***Sexual initiation.*** Participants were asked “Who initiated this sexual encounter?” Response options included “I did,” “My partner did,” “We both did,” and “I’m not sure.” For the purposes of this study, responses were dichotomized: 0 = sexual encounters the participant did not initiate (i.e., “My partner did” and “I’m not sure”) and 1 = sexual encounters the participant initiated or co-initiated (i.e., “I did” and “We both did”).

***Sexual consent.*** We measured sexual consent with the nine items selected in Phase 1. Items assessing internal consent feelings included “During these sexual behaviors, I felt erect/vaginally lubricated,” “During these sexual behaviors, I felt comfortable,” “During these sexual behaviors, I felt turned on,” “During these sexual behaviors, the sexual act itself felt consensual,” and “During these sexual behaviors, I felt ready.” Items assessing external consent

communication included “I used straightforward signals to communicate my willingness to engage in these sexual behaviors,” “I used subtle signals to communicate my willingness to engage in these sexual behaviors,” “I verbally communicated my willingness to engage in these sexual behaviors,” and “I nonverbally communicated my willingness to engage in these sexual behaviors.” Per recommendations on selecting a response format for ESM measures (Fisher & To, 2012; Schimmack et al., 2002), response options for each of these items measuring sexual consent were provided on a unidimensional 11-point sliding scale (“Not at all” to “Very much”).

***Sexual satisfaction.*** Participants responded to “I felt satisfied with these sexual behaviors.” Response options were provided on a unidimensional 101-point sliding scale (“Not at all” to “Very much”).

***Alcohol consumption.*** Participants were asked “About how many alcoholic beverages did you have before engaging in these sexual behaviors?” Response options were provided on a unidimensional 7-point sliding scale (“0” to “6+”). For the purposes of this study, responses were dichotomized: 0 = sexual encounters that did not involve alcohol consumption and 1 = alcohol-involved sexual encounters.

***Analysis.*** We calculated descriptive statistics and bivariate correlations using SPSS 26. Effect sizes for correlations were considered small at .1, medium at .3, and large at .5 (Cohen, 1992). Correlations were tested at an  $\alpha$ -level of .05. We also assessed the reliability of the ESM measures of internal and external sexual consent. A Cronbach’s  $\alpha$  of 0.70 or greater is widely considered to be an adequate indicator of internal consistency (Taber, 2018).

## **Results**

***Person-level descriptive statistics.*** Of the 336 ESM surveys administered, pilot participants completed 251 (74.7%). Ten of the 12 participants reported at least one instance of

sexual behavior during the seven-day ESM study period. For these 10 participants, the average number of sexual encounters was 3.1 (SD = 2.2), ranging from 1 to 7.

The ESM measures successfully captured day-to-day within-person variability in sexual consent. Pilot participants varied in their reports of internal consent feelings and external consent communication; person-level descriptive statistics for the five ESM items related to internal consent are presented in Table 5, and those for the four ESM items related to external consent are presented in Table 6.

Figure 1 depicts how the three pilot participants with at least five data points of partnered sexual activity varied in their internal consent feelings over the seven-day study period. Each of these pilot participants oscillated in their internal consent feelings depending on the sexual encounter. The same was true for external consent communication. Figure 2 depicts the types of cues these same three participants reported using in sexual encounters during this study period.

**Event-level associations.** At the event-level, the five items measuring internal consent feelings were internally consistent ( $\alpha = .71$ ), as were the four items measuring external consent communication ( $\alpha = .70$ ). Mean scores for internal and external consent were significantly associated,  $r = .54, p = .002$ ; sexual encounters with greater use of consent communication cues had greater levels of consent feelings.

Associations between internal and external sexual consent are presented at the item-level in Table 7. Feelings of safety/comfort and readiness were significantly and positively correlated with each type of consent communication,  $r_s \geq .36, p_s < .050$ . Feelings of arousal and agreement/want were significantly and positively correlated with some types of consent communication, while feelings of physical response were not correlated with any type (see Table 7).

Internal consent feelings were strongly associated with sexual satisfaction,  $r = .67, p < .001$ . While internal consent was not significantly greater for sexual encounters with vaginal sex, there was a medium effect size between these two variables,  $r = .31, p = .090$ . Internal consent feelings were not associated with alcohol consumption at the event-level,  $r = .10, p = .598$ .

External consent communication was significantly and positively associated with sexual initiation,  $r = .40, p = .026$ . Specifically, during sexual encounters that participants were involved in the initiation, they reported greater use of explicit cues,  $r = .52, p = .003$ , and implicit cues,  $r = .44, p = .013$ ; however, sexual initiation was not associated with using either verbal or nonverbal cues. Further, external consent communication had little or no association with alcohol consumption at the event-level,  $r = -.14, p = .462$ .

**Open-ended feedback.** When asked which ESM items lacked clarity or sounded awkward, none of the participants selected the items measuring internal consent feelings. However, four of the participants provided critical feedback regarding the ESM measures of external consent communication. Each of these four participants indicated or implied that definitions would have been helpful.

“The straightforward and subtle signals terms are never defined. What is considered straightforward/subtle?” (31-year-old heterosexual woman)

“It is unclear to me what this question (on straightforward signals) means. I’m not sure how you could improve it, except maybe including definitions in the initial survey.” (22-year-old bisexual woman)

“I believe this question (on subtle signals) is unclear when compared to the nonverbal communication of sexual willingness. What differentiates the two?” (27-year-old heterosexual woman)

“Define straightforward/give example. Define subtle/give example (it felt similar to ‘nonverbal’). Again, how is nonverbal different than ‘subtle’ communication.” (25-year-old bisexual woman)

The other six participants who reported at least one sexual encounter indicated that all the ESM measures of external consent communication made sense and none of them sounded awkward.

**Closed-ended ratings of feasibility.** Indicating the feasibility of assessing day-to-day variability in sexual consent using these measures, all 12 pilot participants agreed or strongly agreed that participating in this ESM study was easy. Further, all 12 disagreed or strongly disagreed that participating was confusing. Only two participants rated this study as “frustrating” or “boring,” while 10 rated it as “fun” and nine as “interesting.”

## **Discussion**

Sexual consent is fluid and complex—potentially varying from context to context (Willis & Jozkowski, 2019). Researchers can build on the cross-sectional designs of previous studies that have found substantial between-person variability of sexual consent by employing experience sampling methodology (ESM), or ecological momentary assessment (EMA), to gather multiple points of data from participants over a period of time. Because extant measures of sexual consent are not appropriate for ESM studies, we sought to develop and validate measures for researchers who are interested in tracking day-to-day variations in participants’ experiences of internal consent feelings or external consent communication.

In the present study, we selected items from existing cross-sectional measures of sexual consent to be used in ESM studies. We provided evidence for their face validity using cognitive interviews and content validity using experts’ ratings. Further, we conducted a pilot ESM study to demonstrate their construct validity. Using event-level data, we corroborated previous research on sexual consent regarding expected associations or lack thereof. Similar to Willis et al. (2019), we found that internal and external sexual consent were significantly correlated. Further demonstrating convergent validity, we supported theories that internal consent feelings are related to sexual satisfaction (Marcantonio et al., under review) and that external consent communication is associated with sexual initiation (Muehlenhard et al., 2016). We also support



previous research that engaging in vaginal sex is associated with greater internal consent feelings compared with other sexual behaviors (Marcantonio et al., 2018). Evidencing discriminant validity, we corroborated findings that neither internal nor external consent are associated with alcohol consumption at the event-level for people in committed relationships (Jozkowski & Wiersma, 2015). Overall, the results suggested that the ESM measures developed in the present study are a valid and feasible assessment of people's sexual consent.

### **Methodological Considerations**

Based on findings from the present study, there are two qualities of the ESM measures we developed that warrant further consideration. We described each of these methodological matters and provided recommendations for researchers who use these measures.

First, one of the items selected to assess feelings associated with internal sexual consent did not function optimally. In the pilot study, the item measuring physical response (i.e., "During these sexual behaviors, I felt erect/vaginally lubricated") was not as strongly correlated with the items measuring the other aspects of internal consent as the intercorrelations of those other items. Further, selecting an item for the physical response aspect of internal sexual consent that demonstrated face validity and content validity was difficult—participants and experts preferred different items for this construct. It may be that there was not a single item in the Internal Consent Scale that ideally represented physical response—especially when conceptualizing sexual activity more broadly than vaginal-penile sex, which was the behavior of interest when the items for this measure were written (Jozkowski et al., 2014). Indeed, feeling vaginally lubricated or erect may be less reflective of willingness to engage in behaviors like passionate kissing. Researchers should consider how ESM studies might better measure physical response as a potential indicator of willingness for wider ranges of sexual behaviors. That said, the ESM

measures of internal sexual consent developed in the present study still demonstrated adequate internal consistency and may be used to validly and reliably assess people's day-to-day consent feelings. Researchers using this internal consent measure should simply exercise caution when interpreting this item at time points when participants engaged in partnered sexual activity that did not involve genital stimulation.

Regarding external sexual consent, feedback provided by pilot participants in their open-ended responses indicated that they struggled to distinguish the various constructs of consent communication. Corroborating this feedback, participants also seemed to conflate verbal cues with explicit cues and nonverbal cues with implicit cues in their event-level data—even though these are conceptually distinct categorization systems for consent communication (Hickman & Muehlenhard, 1999; Jozkowski et al., 2019). To help clarify these distinctions in future data collections, we recommend that researchers using the ESM measure of external sexual consent provide the operational definitions of straightforward, subtle, verbal, and nonverbal signals (Table 1) to participants at the beginning of the study. Doing so should increase the validity of these items measures consent communication.

### **Implications for Sexual Consent Research**

ESM studies on sexual consent may provide further empirical support for the conceptualization that sexual consent is contextual (Willis & Jozkowski, 2019). The existing literature has typically only assessed sexual consent cross-sectionally or using analyses that limit conclusions about within-person variability. However, the ESM measures developed in the present study provide a tool that can provide insight regarding whether researchers should be considering the day-to-day nuances of sexual consent. For example, do internal feelings or external communication of consent from previous sexual encounters affect how consent is

experienced during future encounters? Do day-to-day variations in sexual consent predict constructs like relationship satisfaction or sexual satisfaction? Beginning to answer these types of questions will continue to expand the growing literature on the complexities of sexual consent.

The prospective novel contributions of ESM studies designed to investigate sexual consent have the potential to provide previously unexplored facets of consent for several stakeholders to consider. Researchers might examine how previously supported group differences (e.g., gender or relationship status) might vary based on the context of a sexual encounter. Educators could include the effects of context on sexual consent in their curricula, providing students with a model of consent that might be more applicable to their lives than a one-size-fits-all approach (e.g., affirmative consent initiatives). Relationship therapists may draw on how circumstances between partners have the ability to influence sexual consent in attempt to improve communication and relationship satisfaction. Future ESM research on the within-person variability of sexual consent should consider such implications in their study designs.

### **Implications for Sex Research**

We urge sex researchers interested in using ESM, or similar methodologies, to thoughtfully consider the measures they decide to use. ESM measures should demonstrate face validity, content validity, and construct validity (Fisher & To, 2012), as well as feasibility (Myin-Germeys et al., 2018). However, previous studies investigating people's daily sexual experiences have not typically provided empirical evidence supporting the validity of their measures. Rather, some sex researchers have adapted items from scales validated for traditional retrospective cross-sectional surveys and presumed their acceptability for ESM studies (e.g., Holland et al., 2017; Shrier & Blood, 2015). Others have administered full scales validated for other methodologies (e.g., Muise et al., 2014; Paquet et al., 2018), which may be feasible once a day but could

become unduly burdensome in study designs that ask participants to respond more frequently. Still other sex researchers (e.g., Kashdan et al., 2017; Willis & Jozkowski, 2019) have seemingly written items that might appear to be face valid and content valid but should be complemented with data supporting such assumptions—even if they have provided a theoretical rationale for their self-written items (e.g., Fortenberry & Hensel, 2011)

Sex researchers interested in using ESM should emphasize the development of measures that validly assess their constructs of interest and that are feasible for these study designs; doing so will be critical to fully realizing the benefits of ESM: namely, reducing recall bias, increasing ecological validity, and assessing within-person variability. More methodological research that provides robust evidence regarding ESM measures of key constructs in sex research will assist in the standardization and replicability of findings, which could support larger networks of sex researchers using ESM and ultimately generate findings that are reliable and generalizable (Ebner-Priemer & Trull, 2009; Myin-Germeys et al., 2018).

### **Limitations**

The sample sizes in the present study were adequate given their intended purposes (i.e., providing preliminary evidence that these measures demonstrate face validity, content validity, and construct validity). However, no generalizable conclusions can be made from these data, and we should not assess associations between internal and external sexual consent while accounting for within-person variability with the pilot sample. We recommend that future ESM studies investigating sexual consent collect data from samples large enough to support their conclusions and to capitalize on this methodology's ability to assess within-person variability. It is worth nothing that ESM studies tend to have smaller samples due to the time and resources needed to conduct them (van Berkel et al., 2017).

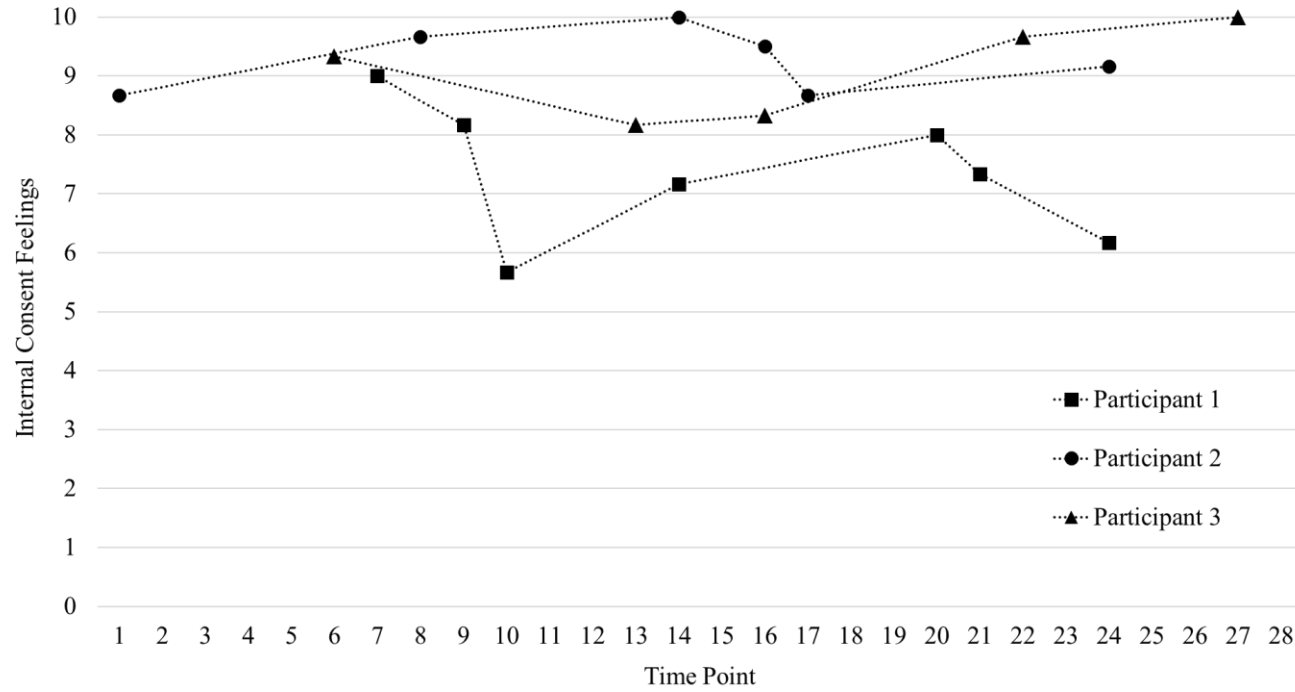
While ESM reduces recall bias, other biases may still be relevant. For example, similar to other study designs, our sampling may have been subjected to a self-selection bias. Since we advertised this study as being on “sexual experiences,” our participants might represent people who are more open and willing to discuss their sex lives. Further, social desirability could have influenced self-reports in this study because we asked about behaviors the people might be inclined to misreport (e.g., sex, alcohol use).

Finally, this study sought to develop valid ESM measures of internal and external sexual consent; yet, a third conceptualization remains: sexual consent perceptions (Muehlenhard et al., 2016). In addition to experiencing feelings associated with a willingness to engage in sexual activity and communicating that willingness to somebody else, people must be able to interpret contextual cues or the communication cues of others that might indicate a person’s willingness to engage in sexual activity. For a more comprehensive assessment of sexual consent using ESM, valid measures should also be developed for consent perceptions. Further, ESM studies that collect data from sexual dyads on these three components of sexual consent would help researchers understand how effective sexual partners are at communicating sexual consent.

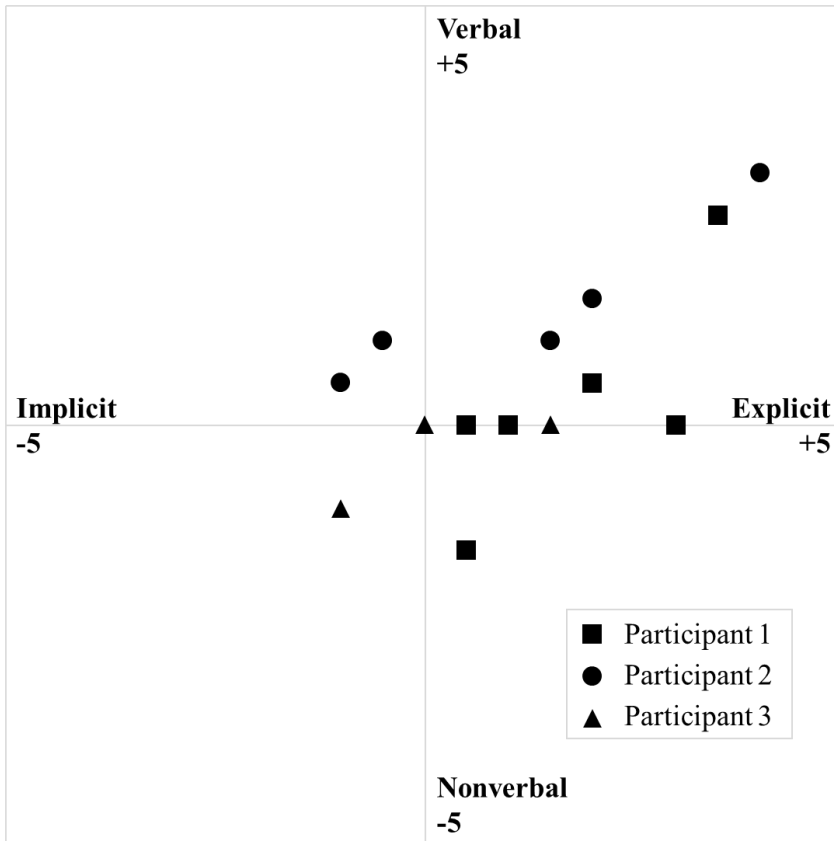
## **Conclusion**

In sum, this study provided valid tools to measure sexual consent in daily life using adapted versions of previous cross-sectional measures. Preliminary data from our pilot study suggested that sexual consent varies over time—consistent with previous work on sexual consent (Willis & Jozkowski, 2019). When using the measures developed in this study, researchers should increase the sample size, increase the study duration, and systematically study variations in internal and external sexual consent while accounting for within-person variability. Overall,

this study provided initial evidence that sexual consent can be validly assessed in real life contexts and that ESM studies can enrich our understanding of how contextual sexual consent is.



*Figure 1.* Internal consent feelings over the seven-day study period for three example participants to demonstrate the day-to-day within-person variability of this construct.



*Figure 2.* External consent communication over the seven-day study period for three example participants to demonstrate the day-to-day within-person variability of this construct. Based on our operational definitions, we conceptualized external consent communication as comprising two independent continua. The explicit-implicit continuum (x-axis) was plotted by averaging the score for the “straightforward” item with the reversed score for the “subtle” item. The verbal-nonverbal continuum (y-axis) was plotted by averaging the score for the “verbally” item with the reversed score for the “nonverbally” item.



Table 1

*Operational Definitions for Each Measured Aspect of Sexual Consent*

Aspect of Sexual Consent	Operational Definition
<b>Internal Consent Feelings</b>	
Physical Response	Feelings associated with the body’s automatic response to an engaging or exciting stimulus
Safety/Comfort	Feelings associated with a calm assurance that everything will be okay and reflect the absence of worry or distress
Arousal	Feelings associated with being titillated or drawn to engaging in sexual activity
Agreement/Want	Aspects of a sexual encounter that make it seem to have been a willing and desired interaction between those involved
Readiness	Feelings associated with a confidence that one is prepared to engage in sexual activity
<b>External Consent Communication</b>	
Explicit	Communication that people will most likely understand at face-value—without much subtext or hinting (Explicit cues may be verbal or nonverbal)
Implicit	Communication that people may or may not understand at face-value—but likely involves subtext or hinting (Implicit cues may be verbal or nonverbal)
Verbal	Communication that relies on words; as such, people can say things to express an intention or desire (Verbal cues may be explicit or implicit)
Nonverbal	Communication that does not rely on words; rather, people can do something or move part of their body to express an intention or desire (Nonverbal cues may be explicit or implicit)

Table 2

*Structured Concurrent Cognitive Interview Prompts*

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Type of Sexual Consent
<b>Internal Consent Feelings</b>
What did this series of feelings seem to be getting at?
Which of these words best captures [insert previous response]?
Can you tell me why you chose this word?
Are there any other words not listed here that you think would be better?
Do these words reflect being willing to engage in sexual activity?
Were any of these words weird?
Were any of these questions difficult to answer?
Are there any other feelings that you associate with consenting to sexual activity?
<b>External Consent Communication</b>
For these words, how would you define the type of communication being described?
What are examples of signals of sexual consent that are [insert previous response]?
Which of these words best captures [insert previous response]?
Can you tell me why you chose this word?
Are there any other words not listed here that you think would be better?
Were any of these words weird?
Were any of these questions difficult to answer?
Is there a better word for “signal?”

---

Table 3

*Index of Item-Objective Congruence Values for the Items Measuring Internal Consent Feelings*

Factor	Item Wording	IIOC Value
Physical Response	I felt rapid heartbeat.	.685
	I felt flushed.	.667
	I felt eager.	-.037
	I felt lustful.	-.056
	I felt erect/vaginally lubricated.	.593
Safety/Comfort	I felt secure.	.971
	I felt protected.	.963
	I felt safe.	.963
	I felt respected.	.704
	I felt certain.	-.296
	I felt comfortable.	.944
Arousal	I felt in control.	.852
	I felt aroused.	.833
	I felt turned on.	.778
Agreement/Want	I felt interested.	.222
	The sexual activity itself felt consented to.	.815
	The sexual activity itself felt agreed to.	.889
	The sexual activity itself felt wanted.	.889
	The sexual activity itself felt consensual.	.852
Readiness	The sexual activity itself felt desired.	.796
	I felt ready.	.870
	I felt sure.	.519
	I felt willing.	-.185
	I felt aware of my surroundings.	-.148

*Note.* The recommended cut-off value for an item that measures its intended operational definition well is .75 (Turner and Carlson, 2003).

Table 4

*Index of Item-Objective Congruence Values for the Items Measuring Internal Consent Feelings*

Factor	Item Wording	IIOC Value
Explicit	...explicit signals...	.810
	...clear signals...	.810
	...obvious signals...	.690
	...unambiguous signals...	.810
	...overt signals...	.810
	...straightforward signals...	.810
	...direct signals...	.452
Implicit	...implicit signals...	.810
	...subtle signals...	.714
	...unclear signals...	.524
	...ambiguous signals...	.810
	...covert signals...	.786
	...cryptic signals...	.810
	...indirect signals...	.476
Verbal	...verbal signals...	.810
	...words...	.810
	...phrases...	.810
	...sentences...	.810
Nonverbal	...nonverbal signals...	.810
	...actions...	.690
	...behaviors...	.571
	...gestures...	.786
	...body language...	.762

*Note.* The wording for each item was “I used \_\_\_\_\_ to communicate my consent.”

The recommended cut-off value for an item that measures its intended operational definition well is .75 (Turner and Carlson, 2003).

Table 5

*Pilot Study Results for ESM Measures of Internal Consent Feelings*

	Time Points		Physical Response		Safety/ Comfort		Arousal		Agreement/ Want		Readiness	
	Completed	With Sex. Act.	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Participant 1	19	7 (36.8%)	6.7	1.7	8.3	1.1	7.6	0.8	8.5	1.0	8.1	1.1
Participant 2	27	6 (22.2)	9.2	1.3	9.8	0.4	10.0	0.0	9.7	0.8	10.0	0.0
Participant 3	19	5 (26.3)	5.8	3.3	10.0	0.0	8.8	1.6	10.0	0.0	10.0	0.0
Participant 4	11	3 (27.7)	5.0	1.7	10.0	0.0	10.0	0.0	10.0	0.0	10.0	0.0
Participant 5	21	3 (14.3)	10.0	0.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0	0.0
Participant 6	19	2 (10.5)	7.5	0.7	9.0	0.0	8.0	0.0	10.0	0.0	9.0	0.0
Participant 7	28	2 (7.1)	6.5	2.1	9.5	0.7	7.0	1.4	9.5	0.7	9.5	0.7
Participant 8	10	1 (10.0)	9.0	—	10.0	—	8.0	—	10.0	—	10.0	—
Participant 9	14	1 (7.1)	8.0	—	10.0	—	10.0	—	10.0	—	10.0	—
Participant 10	27	1 (3.7)	8.0	—	7.0	—	9.0	—	10.0	—	8.0	—

*Note.* “With Sex. Act.” refers to the number of time points during the 7-day pilot study that a participant reported engaging in sexual activity with their partner. The value in parentheses is the percentage of completed surveys for which a participant reported partnered sexual activity.

Table 6

*Pilot Study Results for ESM Measures of External Consent Communication*

	Time Points		Explicit		Implicit		Verbal		Nonverbal	
	Completed	With Sex. Act.	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Participant 1	19	7 (36.8%)	5.0	3.5	5.4	3.3	5.1	3.5	8.1	1.1
Participant 2	27	6 (22.2)	7.0	3.0	9.3	1.0	7.0	3.7	9.0	0.9
Participant 3	19	5 (26.3)	10.0	9.6	8.0	0.9	9.4	1.3	9.6	0.9
Participant 4	11	3 (27.7)	8.0	1.7	8.3	1.5	3.7	0.6	10.0	0.0
Participant 5	21	3 (14.3)	10.0	0.0	10.0	0.0	10.0	0.0	10.0	0.0
Participant 6	19	2 (10.5)	7.0	1.4	6.0	2.8	3.0	4.2	9.0	1.4
Participant 7	28	2 (7.1)	9.0	1.4	8.0	0.0	7.0	1.4	8.0	0.0
Participant 8	10	1 (10.0)	8.0	—	8.0	—	8.0	—	8.0	—
Participant 9	14	1 (7.1)	10.0	—	0.0	—	10.0	—	0.0	—
Participant 10	27	1 (3.7)	10.0	—	3.0	—	10.0	—	3.0	—

*Note.* “With Sex. Act.” refers to the number of time points during the 7-day pilot study that a participant reported engaging in sexual activity with their partner. The value in parentheses is the percentage of completed surveys for which a participant reported partnered sexual activity.

Table 7

*Bivariate Correlations between Internal Consent Feelings and External Consent Communication*

	IC_P	IC_S	IC_A	IC_W	IC_R	EC_EX	EC_IM	EC_VB
IC_P	—							
IC_S	.15	—						
IC_A	.53**	.40*	—					
IC_W	.14	.77***	.34	—				
IC_R	.17	.95***	.49**	.77***	—			
EC_EX	.05	.46**	.27	.53**	.57***	—		
EC_IM	.15	.63**	.32	.41*	.62***	.47**	—	
EC_VB	.20	.38*	.19	.43*	.46**	.69***	.31	—
EC_NV	.03	.43*	.13	.20	.36*	.02	.73***	-.03

*Note.* Internal consent feelings: physical response (IC\_P), safety/comfort (IC\_S), arousal (IC\_A), agreement/want (IC\_W), and readiness (IC\_R). External consent communication: explicit cues (EC\_EX), implicit cues (EC\_IM), verbal cues (EC\_VB), nonverbal cues (EC\_NV).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## CHAPTER 5

# ASSESSING THE WITHIN-PERSON VARIABILITY OF INTERNAL AND EXTERNAL SEXUAL CONSENT

### Introduction

Extant research suggests that sexual consent is complex and contextual. In the academic literature, sexual consent has been conceptualized as an internal willingness to engage in sexual activity; this willingness may be expressed externally (Hickman & Muehlenhard, 1999; Jozkowski, Sanders, Peterson, Dennis, & Reece, 2014). People are diverse in their interactions with others, and research indicates that sexual consent communication can vary across people—by gender, by relationship status, by type of sexual behavior (Jozkowski & Peterson, 2013; Marcantonio, Jozkowski, & Wiersma-Mosley, 2018; Willis, Hunt, Wodika, Rhodes, Goodman, & Jozkowski, 2019). However, very little is known about the day-to-day fluctuations of sexual consent. How much variation in sexual consent can be accounted for by within-person variability? Do a person's experiences with sexual consent during one partnered sexual event influence how they feel or communicate their consent during the next? One approach ideally suited for investigating the potential within-person variability of sexual consent is experience sampling methodology (ESM). In the present study, we used ESM to assess whether and how internal consent feelings and external consent communication vary from day to day.

### Internal and External Sexual Consent

Informed by conceptual and empirical reviews, Willis and Jozkowski (2019) defined sexual consent as one's "willingness to engage in a particular sexual behavior with a particular person within a particular context" (p. 1723). This definition maintains that sexual consent is an internal experience—one that is distinct from, but may be related to, sexual desire (Peterson &

Muehlenhard, 2007). To assess the variety of feelings associated with an internal conceptualization of sexual consent, one research team asked participants to write about the feelings they associated with being willing to engage in sexual activity (Jozkowski et al., 2014). These researchers identified and validated five feelings related to internal consent: physical response, safety/comfort, arousal, agreement/want, and readiness. Thus, whether somebody is willing to engage in a particular behavior with a particular person within a particular context depends on a multidimensional process of internal feelings.

Because people cannot automatically know the feelings of others when they engage in partnered sexual activity, sexual consent should not only be conceptualized as an internal experience (Jozkowski et al., 2014; Muehlenhard et al., 2016). Rather, sexual partners typically communicate their consent. Active consent communication refers to anything people do to indicate their willingness to engage in sexual activity and is diverse in practice; it can be explicit or implicit and verbal or nonverbal (Hickman & Muehlenhard, 1999; Jozkowski et al., 2016; Willis, Canan, Jozkowski, & Bridges, 2020). These types of active communication are considered to be independent—explicit cues might be verbal or nonverbal, and similarly verbal cues might be explicit or implicit.

Previous research has defined each of these types of active sexual consent communication. For example, the following definitions were provided by Willis et al. (2020, p. 57). Explicit verbal sexual consent cues were defined as “straightforward statements...expressing agreement to engage in sexual behavior...using words for actual sexual behavior or a very close synonym” (e.g., “Will you have sex with me?”). Conversely, implicit verbal cues do not employ words that refer to actual sexual behavior; rather, “the connotation or tone of voice used...is sexual in nature” (e.g., “Let’s take this upstairs.”). Explicit nonverbal cues



are “behaviors or actions that are sexually explicit including bodily touching in a sexual way” (e.g., positioning oneself to prepare for a sexual behavior). Finally, implicit nonverbal cues are “behaviors or actions that imply interest in engagement in sexual behavior” (e.g., making certain facial expressions). In these various ways, people can communicate their internal feelings of consent to sexual partners.

Internal consent feelings and external consent communication are related. When developing measures of these two facets of sexual consent, Jozkowski et al. (2014) found evidence that internal feelings aligned with external indicators. Specifically, each active type of external consent communication was positively correlated with each type of internal consent feeling; however, passive consent cues (e.g., communicating willingness by not resisting) were not associated with any of the internal consent feelings (Jozkowski et al., 2014). The correlations between active consent communication and consent feelings were recently replicated (Walsh, Honickman, Valdespino-Hayden, & Lowe, 2019). Though significant, these associations were weak to moderate, suggesting that these types of consent are separate and uniquely contribute to an overall conceptualization of sexual consent.

Further investigating the nature of the associations between internal and external sexual consent, Willis, Blunt-Vinti, and Jozkowski (2019) proposed a model whereby internal consent feelings predicted the consent communication cues participants reported using—based on previous evidence that sexual cognitions tend to precede sexual behaviors (e.g., O’Sullivan & Brooks-Gunn, 2005). They found that associations between verbal cues and feelings of internal consent, while positive and statistically significant, were weaker than those between nonverbal cues and internal consent. The weaker associations between verbal consent cues and internal consent feelings (e.g., physical response, comfort, arousal) may be due to verbal communication

about sex feeling awkward or ruining the mood (Curtis & Burnett, 2017; Foubert et al., 2006). Corroborating Jozkowski et al.'s (2014) data, passive consent cues (e.g., communicating willingness by not resisting) did not reliably reflect internal feelings of consent—which were instead more closely aligned with actions or words (Willis et al., 2019).

### **Variability of Sexual Consent**

Most of the previous studies assessing the nuances of sexual consent have investigated the between-person variability of internal consent feelings and external consent communication. For example, sexual consent can vary by gender, age, or race/ethnicity. Women are generally less direct and less verbal in their consent communication (Jozkowski & Peterson, 2013). People aged 18–25 reported higher internal consent scores compared with those who were older than 45 (Willis et al., 2019). Racial/ethnic minorities might be less explicit and verbal in their consent cues than White participants (Walsh, Honickman, et al., 2019; Willis et al., 2019). To date, there do not appear to be notable group differences in sexual consent based on sexual orientation (Beres et al., 2004; Walsh, Honickman, et al., 2019). In sum, the examination of individual differences related to sexual consent has prevailed in the empirical literature.

However, little is known regarding the within-person variability of internal or external sexual consent. Previous studies on how sexual consent varies by context between people provided initial evidence that a person's consent can depend on the situation. For example, researchers have consistently shown that sexual consent can vary by relationship status and type of sexual behavior (Hall, 1998; Marcantonio et al., 2018; Willis, Hunt, et al., 2019). Other examples of contexts relevant to consent include alcohol consumption (Drouin, Jozkowski, Davis, & Newsham, 2018; Jozkowski & Wiersma, 2015) and being in a private versus a social setting (Jozkowski, Manning, & Hunt, 2018; Jozkowski & Willis, 2020). While these contextual

factors give insight into the potential within-person variability of sexual consent, they are typically assessed cross-sectionally. As such, most conclusions drawn from previous research on the contextual nuances of sexual consent are based on between-person differences at a single moment in time—rather than within-person differences across time.

While these previous empirical approaches indeed demonstrated that particular contexts are associated with how a person experiences and communicates their willingness, they have been unable to track how sexual consent might vary from day to day—thus, accounting for the potential fluctuations due to relevant situational contexts. Therefore, to assess within-person variability, a few research teams have asked participants about sexual consent multiple times over a study period (e.g., using daily diaries). For example, Willis and Jozkowski (2019) asked participants every day for 30 days whether they had engaged in sexual activity that day. On days that participants had engaged in partnered sexual activity, they reported whether the sexual behavior was consensual and how they determined whether it was consensual via open-ended text response. Willis and Jozkowski (2019) found that whether sexual consent was reportedly communicated varied not only between people but also within people and across events. For example, on some days a person might rely on active communication to interpret sexual consent with their sexual partner (e.g., “She asked if I wanted to have sex”); however, on other days, that same person may have reported they assumed consent without using communication cues (e.g., “It just happened;” Willis & Jozkowski, 2019, p. 1729). These open-ended daily diary data suggested that sexual consent is not consistently stable from one partnered sexual event to the next within the same person. However, that study and others that have used daily diaries to collect data related to sexual consent (e.g., sexual compliance [O’Sullivan & Allgeier, 1998] and sexual initiation [Vannier & O’Sullivan, 2011]) presented the quantitative data as an aggregate;

therefore, the literature still lacks an adequate assessment of how sexual consent might vary from day to day. Willis and Jozkowski (2019) urged researchers to employ methodologies and analyses that can estimate the potential variation in sexual consent across contexts.

### **Experience Sampling Methodology**

The need to design studies that can capture the within-person variability of sexual consent remains. Experience sampling methodology (ESM), or ecological momentary assessment (EMA), provides a powerful approach for advancing research on sexual consent, primarily due to its ability to differentiate within- and between-person factors (Csikszentmihalyi & Larson, 2014; Myin-Germeys et al., 2018). Aggregating data across time points—as previous research on sexual consent has done (O’Sullivan & Allgeier, 1998; Vannier & O’Sullivan, 2011; Willis & Jozkowski, 2019)—eliminates the ability to quantitatively assess within-person variability (Schwartz & Stone, 1998). Alternatively, using appropriate analytic strategies to evaluate ESM data (e.g., multilevel modeling) can provide researchers the ability to address research questions regarding day-to-day fluctuations in sexual consent.

Multilevel models using ESM data can even account for intricate nuances like associations between events that occur closer in proximity (de Haan-Rietdijk, Voelkle, Keijsers, & Hamaker, 2017). For example, a person’s willingness to engage in sexual activity one day might be more strongly related to their sexual encounters the previous day than to experiences that happened weeks prior. Such autocorrelations have been controlled for in previous ESM studies on other constructs (e.g., condomless anal sex [Simons, Maisto, & Palfai, 2019]).

In addition, ESM builds on traditional retrospective cross-sectional study designs by reducing recall bias. By collecting data in the moment (or close to it), ESM studies lessen the need for participants to recollect and reconstruct their memories—processes that are prone to

biases (Iida et al., 2012; Csikszentmihalyi & Larson, 2014). Minimizing the time between events of interest (e.g., partnered sexual activity) and the participants' reports regarding those events helps reduce the potential recall bias inherent to most retrospective self-reported data (McCallum & Peterson, 2012; Willis & Jozkowski, 2018), which comprise much of the empirical literature on sexual consent (e.g., Jozkowski et al., 2014; Marcantonio et al., 2018; Willis et al., 2019). According to Simons et al. (2019), ESM may be particularly advantageous for assessing affective and cognitive factors (e.g., internal consent feelings) or continuous behavioral processes (e.g., sexual consent communication) in the moment, whereas discrete behaviors (e.g., type of sexual behavior) might be less susceptible to recall bias.

Finally, ESM studies improve the ecological validity of their findings by asking people about their experiences in their natural environments (Csikszentmihalyi & Larson, 2014; Myin-Germeys et al., 2018). Thus, ESM is suitable for investigating everyday occurrences, such as partnered sexual activity. Data that are more ecologically valid can help researchers understand such nuances as the associations between internal consent feelings and external consent communication—experiences and behaviors that typically cannot be replicated in a laboratory setting.

### **Present Study**

Following recommendations by Willis and Jozkowski (2019), we used ESM to examine the potential within-person variability of sexual consent. Using validated measures of sexual consent that are feasible for ESM studies (Authors, Blinded), we assessed people's internal consent feelings and external consent communication over a 28-day period. We had three specific research aims in this initial account of day-to-day variation in sexual consent.

For RQ1, we aimed to quantify the extent that internal and external sexual consent vary across partnered sexual events within the same person because previous open-ended data have suggested there may be non-trivial within-person variability regarding sexual consent (Willis & Jozkowski, 2019). For RQ2, we aimed to use multilevel models to examine whether internal consent feelings positively predict the type of consent communication cues people report using across experiences as previous cross-sectional studies have shown to be the case at the event-level (Jozkowski et al., 2014; Willis et al., 2019). In an exploratory manner (RQ3), we aimed to investigate whether data-model fit is improved by accounting for the potential associations between reports of sexual consent at proximal time points as has been done in previous ESM studies (e.g., Simons et al., 2019).

## **Method**

### **Participants**

People completed a screener survey ( $n = 545$ ) to determine if they met eligibility criteria. Based on the criteria listed in the procedure, we invited 218 (40.0%) screener participants to participate in the ESM study. Of these, 159 (72.9%) completed the baseline survey; however, 21 (7.5%) of those participants never downloaded the ESM application onto their personal devices.

In sum, 138 people began this 28-day ESM study. Twenty-one (15.2%) people withdrew from the study for personal or unknown reasons. Further, because our primary research aims focused on within-person variability, we removed data from four participants (2.9%) who did not report at least two partnered sexual events during the study period. Thus, the final analytic sample for the present study comprised 113 participants.

On average, the participants included in the analytic sample were 30.2 years old ( $SD = 6.5$ ), ranging from 22 to 66. Regarding gender, 65 (57.5%) identified as women, 47 (41.6%) as

men, and 1 (0.9%) as gender fluid. Regarding race/ethnicity, 79 (69.9%) participants identified as White or European American, 11 (9.7%) as Asian or Asian American, 11 (9.7%) as Hispanic or Latin American, 7 (6.2%) as another race/ethnicity, and 5 (4.4%) as multiple races/ethnicities. Regarding sexual orientation, 82 (72.6%) participants identified as heterosexual, 19 (16.8%) as bisexual, and 12 (10.6%) as another sexual orientation. Participants had been in a relationship with their current sexual partner for an average of 5.8 years ( $SD = 5.8$ ), ranging from 0.3 to 35.3 years.

### **Procedure**

We recruited participants via social media and a campus-wide e-newsletter to complete an eligibility screener. Interested people who clicked on the recruitment link were directed to an introductory page that provided them with information about the study and screener questions using Qualtrics survey software. To be eligible, participants had to be at least 18 years old, have daily access to a device supported by iOS (e.g., iPhone) or Android (e.g., smartphone), and be sexually active. Similar to Willis and Jozkowski (2019), we defined “sexually active” as having had participated in sexual activity (e.g., passionate kissing, oral sex, vaginal sex, anal sex) on at least two days in the preceding week. In addition, screener participants who shared the same geolocation and IP address ( $n = 108$ ) were considered to be potential sexual partners if their responses regarding sexual behaviors in the past week were similar. If eligible based on the other criteria, we only invited the first of these pairs to participate in the full study to avoid dyadic dependencies in the data.

Those eligible were provided a link to the baseline survey, which included the consent form for the 28-day study and sociodemographic items. This baseline survey was completed via Qualtrics survey software on a personal computer at a location of their choosing. Those who

completed the baseline survey received instructions for downloading the LifeData application<sup>6</sup> (lifedatcorp.com) onto their device.

The 28-day ESM study took place from 11<sup>th</sup> April 2020 to 8<sup>th</sup> May 2020 for all participants. ESM surveys were sent to participants three times a day using a semi-random sampling scheme (i.e., random sampling within three fixed windows every day). The specific windows were 7am–9am, 1pm–3pm, and 7pm–9pm (participants' local time). If participants engaged in partnered sexual activity since their previous survey, they responded to measures of internal and external sexual consent. If not, they responded to items on sexual interest and solo sexual behaviors (which were unrelated to the goals of the present study), resulting in surveys of similar length on both tracks—decreasing incentive to falsely report a lack of partnered sexual activity to receive a shorter ESM survey (Willis & Jozkowski, 2019).

Based on the number of ESM surveys they completed, participants received up to a \$40USD Amazon.com e-gift card for their participation. The procedure for this 28-day ESM study was approved by the university's institutional review board in its entirety.

## Measures

**Partnered sexual behavior.** In each of the daily surveys, participants responded to an item that asked about recent partnered sexual activity: “Since the last beep, I engaged in the following behaviors with my partner.” Response options included passionate kissing, genital touching, oral sex, vaginal sex, and anal sex; participants were instructed to select all that applied.

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<sup>6</sup> The LifeData application prompts participants to complete ESM surveys, time-stamps the responses, and stores the data on a secure server. Due to potential sensitivity to the questions asked in the ESM surveys, it is important to select an application that keeps anonymous records. The LifeData application does not record any identifying information from the participant's personal device.



**Internal sexual consent.** At time points that participants reported a recent partnered sexual event, they responded to five items developed and validated to measure internal sexual consent using ESM (Authors, Redacted).<sup>7</sup> Items assessing internal consent feelings included “During these sexual behaviors, I felt **erect/vaginally lubricated**,” “During these sexual behaviors, I felt **comfortable**,” “During these sexual behaviors, I felt **turned on**,” “During these sexual behaviors, the sexual act itself felt **consensual**,” and “During these sexual behaviors, I felt **ready**.” Response options for each of these items measuring internal sexual consent were provided on a unidimensional 11-point sliding scale (“Not at all” to “Very much”). These items demonstrated satisfactory internal reliability ( $\alpha = .84$ ). Higher composite scores indicate greater feelings of internal sexual consent.

**External sexual consent.** At time points that participants reported a recent partnered sexual event, they also responded to four items developed and validated to measure external sexual consent using ESM (Authors, Redacted).<sup>8</sup> Items assessing external consent communication included “I used **straightforward** signals to communicate my willingness to engage in these sexual behaviors,” “I used **subtle** signals to communicate my willingness to engage in these sexual behaviors,” “I **verbally** communicated my willingness to engage in these sexual behaviors,” and “I **nonverbally** communicated my willingness to engage in these sexual behaviors.” Response options for each of these items measuring sexual consent were provided on a unidimensional 11-point sliding scale (“Not at all” to “Very much”).

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<sup>7</sup>These items were designed to assess five types of internal consent feelings identified by and measured in previous research (Jozkowski et al., 2014): physical response, safety/comfort, arousal, agreement/want, and readiness. The operational definitions used to develop these items are included in Authors (Redacted).

<sup>8</sup>These items were designed to assess four types of external consent communication identified by and measured in previous research (Hickman & Muehlenhard, 1999; Willis et al., 2019): explicit, implicit, verbal, and nonverbal. The operational definitions for that were used to develop these items are included in Authors (Redacted). Participants were provided the operational definitions for these constructs before participating in the study.

Based on previous operational definitions (Hickman & Muehlenhard, 1999; Jozkowski et al., 2016; Willis et al., 2020), we conceptualized external consent communication to comprise two independent continua: explicit-implicit and verbal-nonverbal. Therefore, an explicit-implicit score was calculated by averaging the score for “I used straightforward signals to communicate my willingness” with the reversed score for “I used subtle signals to communicate my willingness.” Similarly, a verbal-nonverbal score was calculated by averaging the score for “I verbally communicated my willingness” with the reversed score for “I nonverbally communicated my willingness.” As such, higher composite scores indicate that participants relied relatively more on explicit or verbal cues, respectively, to communicate their consent at a given partnered sexual event.

### **Analysis**

Regarding our initial assessment of the data, we calculated event-level statistics for the ESM measures of sexual consent as well as person-level statistics (e.g., aggregating time points). We examined bivariate correlations at both the event- and person-level to disaggregate within- and between-person sources of variance, respectively. Descriptive statistics and bivariate correlations were produced using SPSS 26.

To answer our specific research questions, we estimated multilevel models (described in detail below). For these models, we reported unstandardized coefficients and standard errors for each predictor variable. These parameters were evaluated at an  $\alpha$ -level of .05. Regarding data-model fit, nested models with relatively smaller values for the Akaike Index Criterion (AIC) and Bayesian Index Criterion (BIC) were considered to fit the data better. We tested these multilevel models using the ‘nlme’ package in *R* (Pinheiro et al., 2020).

First, to examine the extent that participants' reports of internal and external sexual consent significantly varied within people across experiences (RQ1), we calculated intraclass correlation coefficients (ICCs), which range from 0 to 1. These ICCs were estimated using unconditional multilevel models (i.e., without predictors) that nested time points within people and indicated how much variation in participants' reports of internal consent feelings and external consent communication could be attributed to between-person differences. Subtracting the ICCs from 1 provided the amount of variance accounted for by within-person differences.

Second, to assess associations between internal and external sexual consent while accounting for both within- and between-person variability (RQ2), we tested conditional multilevel models with the event- and person-level composite scores for internal consent feelings as independent variables and external consent communication (i.e., explicit-implicit, verbal-nonverbal) as dependent variables. Event-level variables were centered at the person-level means, and person-level variables were centered at the grand means. These models were estimated with random intercepts and fixed slopes. Effects were only modeled for time points in which participants reported a partnered sexual event because participants did not respond to the measures of internal or external sexual consent if they did not recently engage in partnered sexual activity.

Third, to investigate our exploratory research question—whether accounting for the potential associations between sexual consent ratings at proximal time points improved data-model fit (RQ3), we tested the same conditional multilevel models but with a first-order autoregressive error structure. Because time points were not equally spaced (due to semi-random sampling and the inconsistent nature of partnered sexual events), we used a continuous-time

version of the first-order autoregressive error structure, which can handle unevenly spaced assessments.

Finally, in a post hoc manner, we followed up significant effects of event-level composite scores by testing models that included event-level scores for each of the five types of internal consent feelings (i.e., physical response, safety/comfort, arousal, agreement/want, readiness) as individual predictors. Thus, we assessed the predictive effects of each type of internal sexual consent while controlling for the other types.

## **Results**

### **Descriptive Statistics**

Across the 113 participants, a total of 9492 surveys were distributed (i.e., three surveys each day for 28 days). In sum, 7969 surveys were completed; thus, the overall compliance rate was 84.0%. Participants reported a total of 1192 partnered sexual events during the study period (15.0% of completed time points). Reported partnered sexual events with any missing data were removed, resulting in an analytic sample of 1189 events.

At the person-level, the mean for partnered sexual events was 10.5 times over the 28-day study period ( $SD = 7.5$ ), ranging from 2 to 39. Across partnered sexual events, participants reported engaging in passionate kissing a total of 961 times (80.8%), genital touching 976 times (82.1%), oral sex 603 times (50.7%), vaginal sex 777 times (65.3%), and anal sex 60 times (5.0%).

Event-level descriptive statistics for the ESM items regarding internal and external sexual consent are presented in Table 1. Person-level descriptive statistics for these same variables are presented in Table 2. The components of internal and external sexual consent were

approximately normally distributed at the event- and person-level or did not have substantially non-normal distributions (Ryu, 2011).

For most partnered sexual events, participants endorsed relatively high levels of each internal consent feeling with means ranging from 8.18 to 9.28. There was relatively more variability in how participants communicated their willingness during partnered sexual events. The event-level ratings of external consent communication are presented in Figure 1 as a heatmap with explicit-implicit communication as the X-axis and verbal-nonverbal communication as the Y-axis. Participants did not rely relatively more on any particular type of consent communication about 9.7% of the time; these partnered sexual events are represented at the origin of the heatmap. For the other 90.3% of events, participants tended to be more explicit than implicit but favored verbal and nonverbal cues at similar rates.

### **Bivariate Correlations**

At the event-level, most facets of internal and external consent were significantly correlated (Table 1). While some associations were only significant due to the large sample of events, many others represented meaningful effect sizes. A higher rating for any of the five internal consent feelings for a particular partnered sexual event was correlated with higher ratings for each of the other internal consent feelings at the same event,  $r_s \geq .37$ ,  $p_s < .001$ . Further, each of the internal consent feelings were more strongly correlated with explicit consent communication (i.e., straightforward) than the other types of external sexual consent at the event-level,  $r_s \geq .26$ ,  $p_s < .001$ . While correlations between internal sexual consent and consent communication that was verbal or nonverbal were smaller, they remained significant. However, most internal consent feelings were not significantly correlated with implicit consent communication. Finally, more strongly endorsing explicit consent cues was positively correlated

with endorsing verbal consent cues at the event-level,  $r = .50, p < .001$ , and more strongly endorsing implicit consent cues was positively correlated with endorsing nonverbal consent cues at the event-level,  $r = .56, p < .001$ .

Several aspects of internal and external consent were also significantly correlated at the person-level (Table 2). Participants who endorsed higher average ratings for any of the five internal consent feelings tended to endorse higher average ratings for each of the other internal consent feelings,  $r_s \geq .57, p_s < .001$ . Further, people who reported greater internal sexual consent on average tended to rely on explicit consent communication,  $r_s \geq .44, p_s < .001$ ; however, none of the internal consent feelings were associated with verbal or implicit consent communication at the person-level.

### **RQ1: Unconditional Multilevel Models**

We tested unconditional multilevel models to estimate the ICCs for internal and external sexual consent. These models individually predicted each of the internal consent feelings and external consent cues for time points when participants reported a partnered sexual event. ICCs for each aspect of internal and external sexual consent are presented in Table 3.

Results were similar across the internal consent feelings, with ICCs ranging from .326 to .444. Thus, approximately 56–67% of the variance in internal sexual consent could be accounted for by within-person variability.

For external sexual consent, the ICCs for explicit communication (.189) and verbal communication (.233) were smaller than those for implicit communication (.414) and nonverbal communication (.366). Thus, approximately 59–81% of the variance in external sexual consent could be accounted for by within-person variability.

## **RQ2: Conditional Multilevel Models**

We tested conditional multilevel models to examine the associations between internal and external sexual consent while accounting for the substantial within-personal variability in these variables as indicated by the ICCs. Because we conceptualized external consent communication as comprising two independent continua, we tested two separate sets of models. Table 4 presents the models predicting explicit-implicit consent communication, and Table 5 presents the models predicting verbal-nonverbal consent communication.

The conditional model predicting explicit-implicit consent communication fit the data better than the unconditional model,  $\Delta AIC = -10.8$ ,  $\Delta BIC = -0.6$ . Event-level internal consent feelings significantly predicted event-level explicit-implicit consent communication,  $\beta_{1j} = .20$ ,  $p < .001$ . Specifically, for partnered sexual events that they reported greater levels of internal consent feelings, participants relied relatively more on explicit cues to communicate their willingness (and relatively less on implicit cues). Further, person-level internal consent feelings also significantly predicted event-level explicit-implicit consent communication,  $\gamma_{01} = .36$ ,  $p = .005$ . Specifically, participants who reported greater levels of internal consent feelings on average tended to rely relatively more on explicit cues to communicate their willingness across partnered sexual events.

The conditional model predicting verbal-nonverbal consent communication fit the data worse than the unconditional model,  $\Delta AIC = 4.0$ ,  $\Delta BIC = 14.2$ . However, event-level internal consent feelings significantly predicted event-level verbal-nonverbal consent communication,  $\beta_{1j} = .15$ ,  $p = .023$ . Specifically, for partnered sexual events that they reported greater levels of internal consent feelings, participants relied relatively more on verbal cues to communicate their

willingness (and relatively less on nonverbal cues). Person-level internal consent feelings did not significantly predict event-level verbal-nonverbal consent communication,  $\gamma_{01} = -.08, p = .596$ .

### **RQ3: Autoregressive Multilevel Models**

The autoregressive model predicting explicit-implicit consent communication fit the data worse than the conditional model,  $\Delta AIC = 5.9, \Delta BIC = 21.2$ . Similarly, the autoregressive model predicting verbal-nonverbal consent communication fit the data worse than the conditional model,  $\Delta AIC = 1.6, \Delta BIC = 16.8$ . Therefore, accounting for the potential associations between sexual consent ratings at proximal partnered sexual events did not improve data-model fit.

### **Post Hoc Multilevel Models**

To explore the marginal effects of event-level internal sexual consent on event-level external sexual consent, we tested models that included each of the types of internal consent feelings as individual predictors rather than the composite score (Table 6). For these follow-up analyses, we used the conditional models because the autoregressive models did not fit the data better. Event-level feelings of readiness significantly predicted event-level consent communication over-and-above the other types of internal sexual consent. Specifically, feeling more ready for a partnered sexual event was uniquely associated with relying relatively more on explicit cues,  $\beta_{5j} = .14, p = .003$ , and verbal cues,  $\beta_{5j} = .20, p < .001$ , than implicit or nonverbal cues, respectively.

## **Discussion**

Sexual consent is fluid and complex, varying from context to context. Building on the cross-sectional designs of previous studies that have investigated the between-person variability of sexual consent, we used experience sampling methodology (ESM) to gather multiple points of



data over 28 days. In doing so, we provided one of the first in-depth accounts of the within-person variability of sexual consent.

We found substantial fluctuations in people's internal and external sexual consent from one partnered sexual event to the next. In fact, within-person variability accounted for at least 50% (and up to 80%) of the variation in all five consent feelings and each of the four types of consent communication. Because the extant body of research on sexual consent has relied on cross-sectional investigations of between-person differences, much of what seems to contribute to people's experiences or communication of sexual consent remains unexplored. Knowing that sexual consent varies by gender (e.g., Hirsch et al., 2019; Jozkowski & Peterson, 2013), relationship status (e.g., Marcantonio et al., 2018; Willis, Hunt, et al., 2019), or any other individual- or partner-level variable provides some information regarding people's level of willingness for a given partnered sexual event. However, designing studies to capture day-to-day fluctuations—as we did in the present study—helps obtain a more comprehensive account of the nuances of sexual consent.

We tested multilevel models to account for this considerable within-person variability and found that internal consent feelings predicted external consent communication at the event-level event, which corroborates previous cross-sectional research (Jozkowski et al., 2014; Walsh et al., 2019; Willis et al., 2019). Specifically, participants were more explicit and more verbal in how they communicated their willingness during sexual encounters in which they more strongly experienced feelings associated with internal sexual consent—particularly feelings of readiness. Although people regularly use implicit or nonverbal cues as well as context cues to communicate and infer sexual consent (Beres, 2010; Jozkowski et al., 2018; Jozkowski & Willis, 2020), these types of indicators may not reliably reflect particularly strong feelings of willingness—even if

the sexual event itself was considered consensual by all people involved. As such, using explicit or verbal consent communication cues to infer that their partner is ready and willing to engage in sexual activity may be an effective way to perceive greater levels of internal sexual consent.

Event-level and person-level internal consent feelings were similarly important in the prediction of explicit consent communication. However, a participant's average level of internal consent feelings across time points was not relevant for whether they communicated their willingness verbally or nonverbally at a given partnered sexual event—even though their event-level internal consent feelings were. This suggests that the situational context of a sexual encounter is as important as—and potentially more important than—individual differences in how people experience and communicate sexual consent. For example, despite several studies finding cross-sectional differences in sexual consent between women and men (e.g., Hirsch et al., 2019; Jozkowski & Peterson, 2013; Willis, Hunt, et al., 2019), such gender differences should not be assumed to be stable across contexts because people seem to be more dynamic than static in their internal and external sexual consent from one partnered sexual event to the next. In demonstrating that the cues people use to communicate their willingness largely depend on the circumstances of a particular sexual encounter, our findings supported conceptualizations of sexual consent that emphasize situational context (Willis & Jozkowski, 2019).

Further indicating how contextual sexual consent can be, partnered sexual events that occurred closer in proximity did not influence each other regarding sexual consent—as evidenced by the autoregressive models not improving data-model fit. As such, there does not seem to be systematic “carry-over” effects in sexual consent from one sexual event to the next. Instead, the individual characteristics of a partnered sexual event seem highly relevant to how people experience and communicate their consent to that sexual activity. While other constructs

(e.g., mood, stress) are indeed more strongly correlated at relatively proximal time points (Fuller et al., 2003), our initial evidence suggests that a person's internal and external sexual consent is relatively unique to a given sexual encounter. Researchers using ESM to study sexual behavior have incorporated autoregressive components into their models seemingly under the assumption that reports that occurred closer in time would be more strongly associated (e.g., Simons et al., 2019); however, doing so may be unwarranted. We recommend that researchers using ESM consider autocorrelations but ultimately favor parsimony when specifying their multilevel models.

### **Future Directions**

Because more than half of the variance in sexual consent was at the within-person level in this sample, understanding momentary sexual consent remains an important research aim. A prominent challenge of sexual consent research going forward will be identifying the characteristics (trait, relational, and situational) that contribute to this observed within-person variability of sexual consent from day to day—a challenge for which ESM study designs are ideally suited.

Explanatory models or prevention efforts that fail to consider and emphasize the contextual nature of people's willingness to engage in sexual activity seem to be missing much of the variability in sexual consent communication as a target behavior (Simons et al., 2019). Future studies should consider what contexts are associated with communicating sexual consent explicitly, especially because our findings and those of others indicate that explicit cues are more strongly associated with internal consent feelings than implicit cues (Jozkowski et al., 2014; Willis et al., 2019). Study designs that incorporate the variation of sexual consent communication within people across time will be able to investigate why a person might rely

more on explicit cues on some occasions but not others. Understanding the contextual variables that predict a person's consent communication for a given sexual encounter could help improve the effectiveness of prevention and education programs designed to increase people's use of explicit or verbal consent cues—in line with affirmative consent initiatives (Jozkowski, 2016; Willis & Jozkowski, 2018).

There are many candidate constructs that may be relevant to sexual consent in the moment and, if supported by future research, would be worth considering for prevention or education efforts. Daily intrapersonal or interpersonal characteristics, such as a person's mood or relationship satisfaction, might affect a person's experience of sexual consent that day. Further, there is cross-sectional evidence that the situational contexts of a partnered sexual event can influence people's feelings or communication of willingness—contexts like alcohol consumption (Drouin et al., 2018; Jozkowski & Wiersma, 2015) or type of sexual act (Hall, 1998; Willis, Hunt, et al., 2019). In addition to understanding the antecedents of internal and external sexual consent, future studies might also investigate the potential intrapersonal or interpersonal consequences of partnered sexual events that are associated with relatively higher or lower levels of sexual consent feelings. Researchers have posited that positive experiences regarding sexual consent may lead to increased sexual pleasure or general sexual well-being (Marcantonio, Willis, & Jozkowski, in press). This would be a worthy pursuit for further investigation.

### **Strengths and Limitations**

The primary strength of the present study was its use of ESM to assess the within-person variability of sexual consent. Study designs that employ ESM can build upon the limitations of previous research on sexual consent in at least three ways. First, while previous studies have collected multiple data points from participants regarding their consent to sexual activity

(Vannier & O’Sullivan, 2011; Willis & Jozkowski, 2019), little to no work has investigated day-to-day fluctuations in sexual consent using sophisticated statistical analyses (e.g., multilevel modeling). An additional strength of our study design was that it reduced recall biases inherent to self-reported retrospective sexual behavior data (Willis & Jozkowski, 2018); however, other biases (e.g., social desirability) remain a concern. Finally, by asking participants to fill out daily surveys in their typical settings, we likely improved the ecological validity of our findings.

A persistent limitation of ESM studies is the lack of validated measures (Ebner-Priemer & Trull, 2009). Because ESM researchers must consider feasibility and participant fatigue when designing their studies, they typically adopt a single item or a few items from scales that were developed for traditional cross-sectional retrospective survey designs (Myin-Germeys et al., 2018; van Berkel, Ferreira, & Kostakos, 2017). For example, they might select the item(s) with the largest factor loading(s) (Fisher & To, 2012). However, another strength of the present study was our use of measures that underwent a rigorous development process to ensure their validity (i.e., face, content, convergent, and divergent) and reliability (Authors, Redacted). Results from the present study further supported the internal consistency and criterion validity of these ESM measures of internal and external sexual consent.

The present study’s sample size ( $n = 113$ ) was a strength and a limitation. In van Berkel et al.’s (2017) methodological review of ESM studies that used mobile devices, the mean number of participants was 53 with half of the studies having 19 or fewer participants. Therefore, our sample size was relatively high for this type of study design; however, these participants remain a select subpopulation and generalizing findings to the larger population of sexually active adults in committed relationships should be done with caution. That said, the present study’s sample

was more heterogeneous regarding age, gender, and sexual orientation than most previous cross-sectional studies on sexual consent according to a systematic review (Willis et al., 2019).

Because higher compliance rates indicate a more comprehensive assessment of the constructs of interest, another strength of the present study was its 84.0% compliance rate—more than one standard deviation above the average compliance rate of 69.6% across ESM studies included in van Berkel et al.'s (2017) methodological review. In that review, studies that provided compensation based on how many surveys participants completed had the highest compliance rates; our study supported this association.

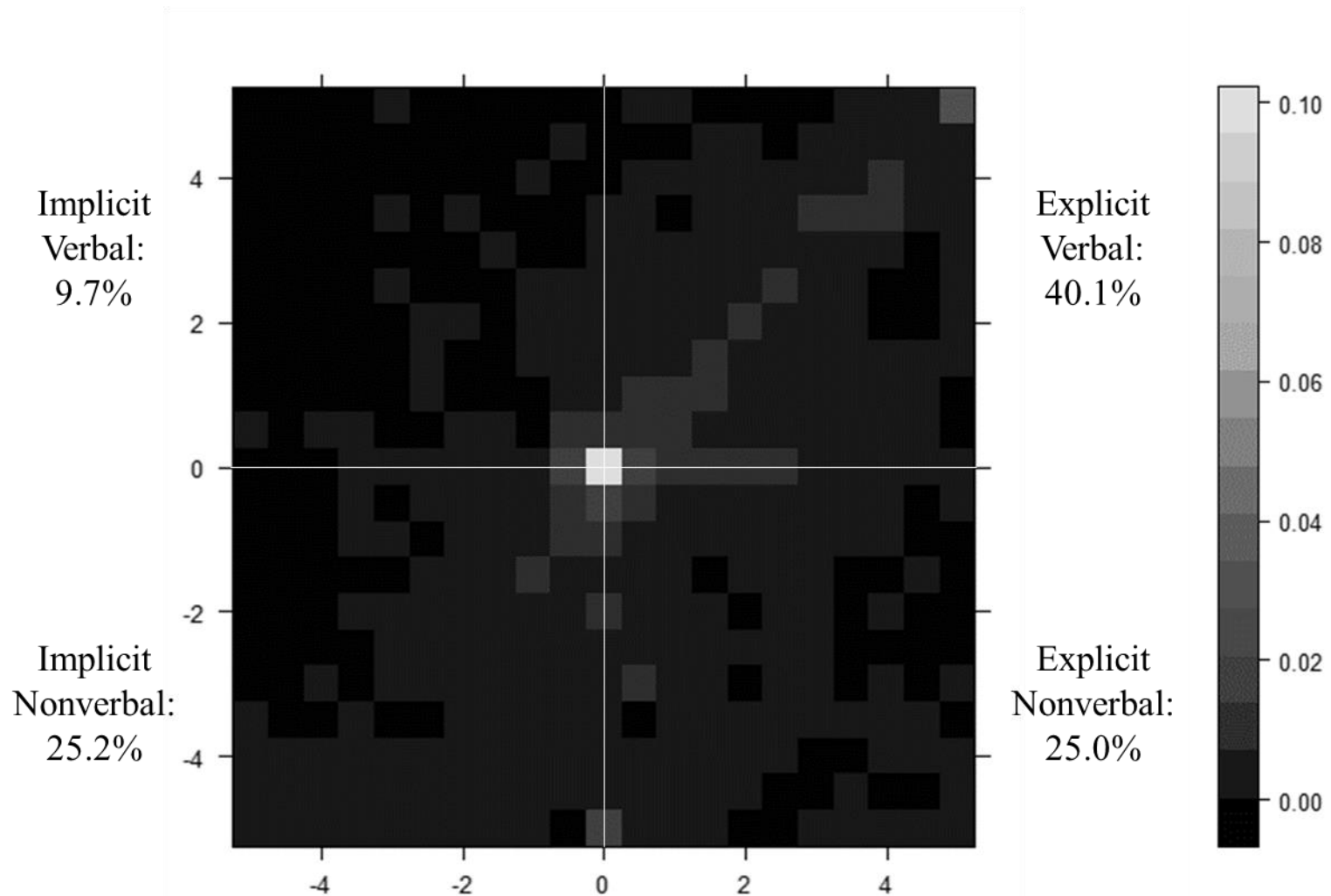
Another consideration and potential limitation of ESM studies is their proclivity to reactivity, which occurs when experiences or behaviors are affected by the act of assessing them. Self-monitoring has been used as an effective strategy for changing behavior—a desired outcome for many interventions (Korotitsch & Nelson-Gray 1999). However, such changes in experience or behavior are not welcomed in research designed to examine naturally occurring phenomena (Simons et al., 2019). Future research should investigate the extent that reporting internal and external sexual consent over a study period might influence participants' partnered sexual events and consider ways to reduce reactivity (e.g., Myin-Germeys et al., 2018).

Finally, the global temporal context in which this study took place warrants mention. All participants completed this study when their daily lives were likely affected by the COVID-19 pandemic. Because participants took the screener survey after pandemic-related social distancing measures were in place, our sample reflects participants who were still engaging in sexual activity despite these restrictions. While we cannot comment on the potential effects of pandemic-related events on people's willingness to engage in partnered sexual activity, our study

design methodologically controlled for the turbulent week-to-week variability in daily life during this time by having all participants complete the present study during the same 28-day period.

## **Conclusion**

In the present study, we provided evidence that multilevel models accounting for within-person variability can explain a substantial proportion of variance in internal and external sexual consent—at least 50% and up to 80%. Our findings supported Willis and Jozkowski’s (2019) emphasis on the nuanced nature of sexual consent, which they defined as a “willingness to engage in a particular behavior with a particular person within a particular context” (p. 1723). Indeed, people’s sexual consent seems to vary greatly based on the context in which partnered sexual events occur. Going forward, experience sampling and similar methodologies should be employed to better understand the time-varying contextual factors relevant to sexual consent.



*Figure 1.* Heatmap depicting event-level sexual consent communication. The legend indicates the proportion of partnered sexual events for which participants reported favoring certain types of consent cues. The x-axis is the explicit-implicit continuum; the y-axis is the verbal-nonverbal continuum.



Table 1

*Event-Level Descriptive Statistics and Correlations (n = 1189)*

	<i>M</i>	<i>SD</i>	Range	Skew.	Kurt.	1.	2.	3.	4.	5.	6.	7.	8.
1. Physical response	8.18	2.36	0 – 10	-1.49	1.58	—							
2. Safety/comfort	8.96	1.50	1 – 10	-1.92	4.29	.39***	—						
3. Arousal	8.45	1.95	0 – 10	-1.55	2.48	.72***	.49***	—					
4. Agreement/want	9.28	1.30	2 – 10	-2.30	6.20	.37***	.52***	.49***	—				
5. Readiness	8.66	1.80	0 – 10	-1.70	2.99	.50***	.60***	.59***	.58***	—			
6. Explicit cues	7.84	2.64	0 – 10	-1.42	1.23	.26***	.27***	.27***	.29***	.35***	—		
7. Implicit cues	6.01	3.20	0 – 10	-0.48	-1.01	.02	.06	.03	.01	.06*	-.16***	—	
8. Verbal cues	6.69	3.42	0 – 10	-0.81	-0.76	.16***	.08	.13***	.11***	.20***	.50***	-.10**	—
9. Nonverbal cues	6.94	3.05	0 – 10	-0.93	-0.27	.06*	.11***	.11***	.15***	.13***	-.07*	.56***	-.30***

*Note.* Descriptive statistics and correlations were calculated for the 1189 semi-random assessments for which participants reported a partnered sexual event.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

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Table 2

*Person-Level Descriptive Statistics and Correlations (n = 113)*

	<i>M</i>	<i>SD</i>	Range	Skew.	Kurt.	1.	2.	3.	4.	5.	6.	7.	8.
1. Physical response	8.39	1.43	3 – 10	-1.07	1.41	—							
2. Safety/comfort	9.00	1.09	4.7 – 10	-1.47	2.35	.57***	—						
3. Arousal	8.61	1.25	4.5 – 10	-1.03	0.72	.86***	.73***	—					
4. Agreement/want	9.38	0.84	6 – 10	-1.63	2.46	.51***	.72***	.63***	—				
5. Readiness	8.78	1.16	4.7 – 10	-0.94	-0.59	.70***	.83***	.76***	.73***	—			
6. Explicit cues	8.06	1.39	4.2 – 10	-0.42	-0.51	.45***	.44***	.49**	.43***	.56***	—		
7. Implicit cues	6.03	2.31	0 – 10	-0.43	-0.43	-.02	.07	-.02	.02	.09	-.08	—	
8. Verbal cues	6.85	2.03	0 – 10	-0.72	0.47	.09	.01	.06	.04	.13	.42***	-.02	—
9. Nonverbal cues	6.89	2.28	0.3 – 10	-0.83	0.18	.06	.17	.09	.25**	.21*	.06	.71***	-.25**

*Note.* Descriptive statistics and correlations were calculated using participants' average scores from the 28-day study period.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 3

*Intraclass Correlation Coefficients for Internal and External Sexual Consent*

	ICC	95% CI	1 – ICC
<i>Internal Sexual Consent</i>			
Physical response	.326	[.254, .396]	.674
Safety/comfort	.444	[.372, .524]	.556
Arousal	.356	[.288, .436]	.644
Agreement/want	.402	[.331, .482]	.598
Readiness	.357	[.289, .437]	.643
<i>External Sexual Consent</i>			
Explicit cues	.189	[.136, .256]	.811
Implicit cues	.414	[.344, .495]	.586
Verbal cues	.233	[.175, .305]	.767
Nonverbal cues	.366	[.298, .447]	.634

*Note.* Each ICC indicates the proportion of variance that can be accounted for by between-person variability. 95% CI refers to the 95% confidence intervals for the ICC. 1 – ICC indicates the proportion of variance that can be accounted for by within-person variability.

Table 4

*Multilevel Models Predicting Explicit-Implicit Sexual Consent Communication*

	Unconditional Model		Conditional Model		Autoregressive Model	
	Coef. (SE)	<i>t</i>	Coef. (SE)	<i>t</i>	Coef. (SE)	<i>t</i>
<i>Fixed Effects</i>						
Intercept ( $\beta_{0j}$ )	5.97 (0.13)	45.76***	5.94 (0.13)	46.83***	5.95 (0.13)	47.45***
Internal consent ( $\beta_{1j}$ )			0.20 (0.06)	3.61***	0.21 (0.06)	3.79***
Internal consent ( $\gamma_{01}$ )			0.36 (0.13)	2.88**	0.35 (0.12)	2.80**
<i>Random Effects</i>						
	Std. Dev.	Var. Comp.	Std. Dev.	Var. Comp.	Std. Dev.	Var. Comp.
Intercept variance ( $u_{0j}$ )	1.20	1.44	1.14	1.30	1.17	1.37
Level 1 ( $e_{ij}$ )	1.91	3.65	1.90	3.61	1.89	3.57
CAR1 ( $\varphi_{ij}$ )					0.01	0.00
<i>Model Fit</i>						
	AIC	BIC	AIC	BIC	AIC	BIC
	5084.2	5099.4	5073.4	5098.8	5079.3	5120.0

Note. CAR1 = Continuous-time first-order autoregressive component. Smaller AIC and BIC values represent a better data-model fit.

\*\* $p < .01$ . \*\*\* $p < .001$ .

Table 5

*Multilevel Models Predicting Verbal-Nonverbal Sexual Consent Communication*

	Unconditional Model		Conditional Model		Autoregressive Model	
	Coef. (SE)	<i>t</i>	Coef. (SE)	<i>t</i>	Coef. (SE)	<i>t</i>
<i>Fixed Effects</i>						
Intercept ( $\beta_{0j}$ )	4.93 (0.15)	31.86***	4.94 (0.16)	31.62***	4.95 (0.16)	31.68***
Internal consent ( $\beta_{1j}$ )			0.15 (0.07)	2.28*	0.15 (0.07)	2.31*
Internal consent ( $\gamma_{01}$ )			-0.08 (0.15)	-0.53	-0.08 (0.15)	-0.51
<i>Random Effects</i>						
	Std. Dev.	Var. Comp.	Std. Dev.	Var. Comp.	Std. Dev.	Var. Comp.
Intercept variance ( $u_{0j}$ )	1.42	2.02	1.43	2.04	1.58	2.50
Level 1 ( $e_{ij}$ )	2.25	5.06	2.25	5.06	2.22	4.93
CAR1 ( $\varphi_{ij}$ )					0.05	0.00
<i>Model Fit</i>						
	AIC	BIC	AIC	BIC	AIC	BIC
	5480.5	5495.7	5484.5	5509.9	5486.1	5526.7

*Note.* CAR1 = Continuous-time first-order autoregressive component. Smaller AIC and BIC values represent a better data-model fit.  
\* $p < .05$ . \*\*\* $p < .001$ .

Table 6

*Post Hoc Multilevel Models Predicting Sexual Consent Communication*

	Conditional Explicit-Implicit Model		Conditional Verbal-Nonverbal Model	
	Coef. (SE)	<i>t</i>	Coef. (SE)	<i>t</i>
<i>Fixed Effects</i>				
Intercept ( $\beta_{0j}$ )	5.94 (0.13)	46.83***	4.94 (0.16)	31.61**
Physical response ( $\beta_{1j}$ )	0.06 (0.04)	1.66	0.09 (0.04)	2.11*
Safety/comfort ( $\beta_{2j}$ )	-0.02 (0.06)	-0.27	-0.13 (0.07)	-1.89
Arousal ( $\beta_{3j}$ )	-0.03 (0.05)	-0.61	-0.08 (0.06)	-1.30
Agreement/want ( $\beta_{4j}$ )	0.01 (0.07)	0.20	-0.03 (0.08)	-0.35
Readiness ( $\beta_{5j}$ )	0.14 (0.05)	2.94**	0.20 (0.06)	3.51***
Internal consent ( $\gamma_{01}$ )	0.36 (0.13)	2.88**	-0.08 (0.15)	-0.53
<i>Random Effects</i>				
	Std. Dev.	Var. Comp.	Std. Dev.	Var. Comp.
Intercept ( $u_{0j}$ )	1.14	1.30	1.43	2.04
Level 1 ( $e_{ij}$ )	1.89	3.57	2.23	4.97
<i>Model Fit</i>				
	AIC	BIC	AIC	BIC
	5092.7	5138.4	5493.0	5538.6

*Note.* CAR1 = Continuous-time first-order autoregressive component. Smaller AIC and BIC values represent a better data-model fit.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## CHAPTER 6

### REFLECTIONS AND FURTHER PLANS

#### **Path to Starting this PhD**

Until beginning my PhD studies at the University of Arkansas, I had stumbled my way recklessly through higher education. In my three years of undergraduate studies, I changed majors as flippantly as if I were trying on different hats in front of a mirror: pre-medicine, sports management, political science, German, psychology. I entered my first semester at the University of South Carolina majoring in pre-medicine because people labelled as “smart” are told they are supposed to be doctors. Within the first few weeks of independence afforded at the university, I realized (or acknowledged for the first time) that I didn’t have any interest in being “that kind of a doctor;” it would be years before I even began to understand other kinds. Sports management and political science also didn’t last long. I love competition but ultimately decided the realm of sports was more of a hobby for me. And while I appreciated that political science textbooks had an uncanny ability to ease me into a deep slumber, I figured falling asleep at my desk might not bode well for a career. German was the first major to stick because I loved actively honing those language skills and learning about another culture; however, I never once considered a degree in German to be the foundation of a job. Then after three semesters of taking random psychology courses as electives, I decided—with a “why not” attitude—to make psychology a second major. The school required a certain amount of hours to graduate with a degree anyway, so I just made all of my remaining courses German or psychology.

Because I had experienced success in my undergraduate courses, I’d always considered graduate school to be an option. But this prospect was accompanied by a sense of dread rather than excitement or opportunity. For as long as I could remember, I had been going through the

same cycle of attending classes, doing homework, and taking tests. Over and over. Year after year. The monotony was uninspiring. I assumed graduate school would be more of the same and consequently didn't prioritize it when future planning. But once my undergraduate tenure was coming to an end and I still had no idea what I wanted to pursue next, I defaulted to continuing my formal education.

Without much reflection, I applied to a few forensic psychology master's programs, expecting graduate school would certainly be a one-and-done experience. During orientation for the program at Marymount University, I found myself surrounded by people who were similarly intrigued by the idea of profiling serial killers as a profession. Then the opening speaker got up and clicked to the first slide of their presentation: "Why Forensic Psychology Has Nothing to Do with Profiling Serial Killers." Well, I was committed at that point.<sup>9</sup> So I resolved to sticking around and learning whatever I had gotten myself into. My coursework and internships were engaging, but they did not reflect anything I'd try to do long-term. I didn't want to follow any of the paths my peers were considering: law school, counselling prisoners, law enforcement. However, I would soon find my place in everything. After a life of being forced into the repetitive cycle of formal education, I pondered what learning might be like outside of the restraint of a classroom. The prospect of freely generating ideas and thinking critically was invigorating. And my professors seemed to experience these in their professional posts.

Thus, the pursuit for a PhD began. That I was clueless quickly became all too apparent. But being dedicated and generally resourceful can go a long way. Because Marymount University did not have research faculty, I cast a wide net for potential labs across the Washington, DC area—hungry for any research experience to begin my journey. I emailed

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<sup>9</sup> That's the thing about academic calendars; they are unforgiving. If you don't get into a program or realize you should perhaps be in another program, you have to wait at least a year to have another shot.

scores of professors in psychology departments, offering my service as a volunteer research assistant. My opportunity eventually came; Dr. Yulia Chentsova-Dutton graciously invited me to work in her Culture and Emotions Lab at Georgetown University. While the topics she studied were not anything I would consider investigating myself, being exposed to the scientific process and to standard research protocols in action was invaluable as an aspiring academic.

Newly emboldened with a sense of direction and purpose, I needed to consider what types of questions I wanted to try to answer with research. Parallel my first exposure to a research lab, another formative experience greatly informed the development of my research interests. Before that year at Marymount University, I had occasionally heard statistics about sexual violence or read satires about the differences between girls and boys but had never truly considered what feminism meant—I certainly had never had mentors encourage me to actively see the world for all its gendered woes. Learning from Drs. Angel Daniels and Karen Davis about gender-based violence was as devastating as it was motivating. Under their tutelage, the male privilege that had blinded me began to fade. As a result, I was perplexed that sexual violence persisted so pervasively; this bewilderment fueled my initial research ideas. My first ever research project (titled *“I Do” Does Not Equal Consent*) investigated how people’s attitudes toward marital rape were associated with U.S. states removing their marital rape exemptions.

When the time came to apply to PhD programs, I sought clinical psychology programs<sup>10</sup> with labs in which I could incorporate my developing interests in sexual consent. During my interview with Dr. Rosemary Nelson-Gray at the University of North Carolina at Greensboro, I proposed a research project that combined my interests with her work on borderline personality

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<sup>10</sup> Similar to my misconception of “doctors” during my undergraduate years, I didn’t have an appropriate understanding of what “psychologists” could be even as I was applying to PhD programs. Because my influential academic mentors to that point were clinical psychologists, that’s the path I thought I should pursue.



disorder. Specifically, I wanted to examine whether and why women with borderline personality traits may be more willing to consent to sexual activity that they don't want to engage in. I was thrilled that she invited me to join her research lab and eager to begin my studies. But I soon encountered the list of expectations in a clinical psychology program that had nothing to do with research. Frustrated by the limited opportunities to train as a researcher and to study sexual consent outside of a clinical context, I began to question whether clinical training was a necessary hurdle along my way to being a researcher in a psychology department at a university. I sought the counsel of several faculty members to gather their informed perspectives on the matter. One of them gave me a piece of advice that would upend my life for the better: Find the person doing exactly what you want to be doing and find a way to work with them.

Enter Dr. Kristen Jozkowski. I had read plenty of research articles on sexual consent and sexual violence, so her name was familiar. From what I could tell, she was establishing herself as a leader in the field of sexual consent and her research trajectory was steadily building momentum. I particularly appreciated that she didn't always situate sexual consent within the context of sexual violence; her work demonstrated that sexual consent is a meaningful topic to research in its own right. In our initial phone conversations, Dr. Jozkowski not only confirmed that she was doing exactly what I wanted to be doing, but she also embodied values I respect in a mentor—authenticity, introspection, generosity. There was seemingly one problem: she was a professor in a community health promotion program, but I'd only been trained as a psychologist and intended to work in a psychology department after graduate school. So I went back to the same faculty member who emphasized finding the right mentor and asked them whether they thought it would matter if I had a PhD in community health promotion. Their response: If you're

great at what you do, nobody will care what's listed on your diploma. And like that, I headed to the University of Arkansas to pursue greatness with Dr. Jozkowski.

### **Conception and Explanation of the Dissertation**

“I think daily diary methodology would be an ideal approach to continue to understand consent and the contextual factors that may impact it.” These words appeared near the end of Dr. Jozkowski's dissertation in 2011. My dissertation is a realization of this proposition.

In my first semester at the University of Arkansas, Dr. Jozkowski and I applied for funding to conduct a daily diary study looking at the effect of sexual precedent on sexual consent. We were awarded this grant and collected the data later that academic year. Never having used daily diaries, I certainly learned much from this study. Lessons I received while planning and implementing that study ranged from setting up the smartphone application that would administer the daily surveys to writing items for the daily surveys to structuring datasets that involved multiple time points for each participant.

This daily diary project at the beginning of my time as Dr. Jozkowski's student was one of many studies we conducted that required me to learn new methodologies. I also led a research project that used media content analysis to investigate how sexual consent communication is portrayed in pornographic films and another that assessed people's perceptions of consent cues using a staggered vignette protocol. While each of these studies contributed to the body of literature on sexual consent, neither seemed to have the same potential to uncover the nuances of sexual consent in people's actual sexual experiences that was afforded by daily diaries and similar methodologies.

Wanting to continue studying the day-to-day complexities of sexual consent, I sought further education on the appropriate methodologies. What I had learned from that initial daily

diary project needed to be complemented by formal training from experts. Thus, in my third year, I attended the three-day REAL (Research on Experience Sampling and Ambulatory methods Leuven) workshop in Belgium. This workshop introduced experience sampling methodology (ESM) and focused on three primary aspects: designing study protocols, developing appropriate measures, and analyzing multilevel data. While many of the workshop's recommendations regarding study design were consistent with the methodological choices we made in that first daily diary study on sexual consent (e.g., survey flow, feasibility, compensation), I learned a considerable amount regarding how to improve on the measurement and analysis of that previous study.

First, in the daily diary study, we included two questions regarding sexual consent—neither of which were accompanied by any evidence on reliability or validity. Rather, we had simply written the items based on our, albeit informed, understanding of sexual consent. A closed-ended question asked, “Were these sexual acts that happened in the past 24 hours consensual?” on a seven-point Likert-type scale. A follow-up open-ended asked, “What was said, done, or felt to make you give this rating for consent?” While we were correct to assume that fewer items are required for ESM studies (rather than administering the entire Internal and External Consent Scales, for example) given the increased burden placed on participants, I learned in the REAL workshop how we might have better developed our measures. For example, we could have further considered the timing referenced in our items. Rather than asking people about their previous 24 hours, participants could have referenced shorter periods if we had administered the items multiple times a day—allowing us to reduce the time between their experiences and reports as well as delineate multiple sexual encounters in a given day. But most importantly, we did not take the proper steps to ensuring the reliability and validity of our items.

Given the general lack of guidance regarding measurement for ESM and similar methodologies, many researchers write or select items without subjecting them to rigorous validation processes (as we were also guilty of in that daily diary study). Therefore, in Manuscript 1 of this dissertation, I aimed to develop valid and feasible measures of sexual consent to be used in ESM studies while simultaneously providing a potential template for researchers interested in this type of methodology. Specifically, I provided details regarding how researchers can provide evidence supporting the face validity, content validity, and construct validity of ESM measures via cognitive interviews, expert ratings, and pilot testing, respectively.

Second, the data analysis of that first daily diary study on sexual consent was not able to directly assess within-person variability. Limited by the items themselves, data were aggregated across the 30 days of the study. Thus, we captured day-to-day variability in a rudimentary fashion: participants ranged from 0 to 1 regarding the proportion of partnered sexual events in which they had relied on communication cues to perceive sexual consent. We used this score as an outcome measure in a piecewise linear regression model. However, I learned in the REAL workshop how to better analyze ESM data using multilevel models. Doing so allows researchers to more precisely estimate the amount of variance that can be accounted for at the within-person level. By nesting time points within people, multilevel models can include both event- and person-level predictors. Further, I learned how multilevel models can be estimated using error structures that are potentially relevant to day-to-day variations. Thus, in Manuscript 2 of this dissertation, I aimed to administer the measures of sexual consent developed in Manuscript 1 and consequently analyze those data using multilevel models.

Overall, the fundamental idea for this dissertation was conceived almost a decade ago when Dr. Jozkowski was writing her dissertation. Similarly interested in the day-to-day nuances

of sexual consent, I began pursuing this line of research alongside her once I arrived at the University of Arkansas. After an initial study that was limited in many ways regarding an accurate assessment of the within-person variability of sexual consent and having received formal training on ESM as well as corresponding statistical approaches, I designed this dissertation to refine our earlier approach and contribute a comprehensive account of whether and how both internal consent feelings and external consent communication vary from one sexual encounter to the next.

### **Methodological/Conceptual Implications**

Research on sexual consent is currently experiencing exponential growth. Many researchers have claimed that sexual consent is contextual and can vary from day to day. Yet, most studies to date have relied on traditional retrospective cross-sectional survey designs. This dissertation has meaningful implications for how researchers can design studies to investigate sexual consent using ESM or similar methodologies as well as how they conceptualize sexual consent broadly.

Methodologically, the inability of previous study designs to appropriately assess the within-person variability of sexual consent is clear. Previous research has typically either collected data on sexual consent for one point in time, aggregated data across multiple time points, or separately investigated data referencing various contexts without accounting for within-person dependencies. Each of these approaches have provided valuable insights regarding between-person associations relevant to sexual consent. However, the ceiling for what can be known about sexual consent will be lower than it should be if researchers do not use methodologies to investigate the potential fluctuations in sexual consent a single person might experience from one encounter to the next. This dissertation indicated just how low this ceiling

seems to be: between-person differences only accounted for 20–50% of the variation in event-level sexual consent scores. That means previous cross-sectional studies have had the potential to explain, at most, half of what’s going on—and that’s if the models they tested had an  $R^2$  of 1.00. I demonstrated that there is much more to be learned regarding sexual consent as long as the methodologies used are able to account for within-person variability. In this dissertation, I provided a tool for at least one type of study design that can elevate the level of how much we can discover regarding sexual consent. Using ESM to study sexual consent (or other aspects of daily life) has clear advantages over retrospective cross-sectional study designs—namely, assessment of within-person variability, reduction in recall bias, and improvement of ecological validity.

Conceptually, that so much of a person’s internal consent feelings and external consent communication seems to depend on the situational circumstances of a particular sexual encounter corroborates the definition of sexual consent that Dr. Jozkowski and I have touted in previous writings: “a willingness to engage in a particular sexual behavior with a particular person within a particular context.” People and their experiences exist on continua, and this dissertation supports that theory. How people feel and communicate their consent cannot readily be reduced to a yes-no distinction. Like sexual activity itself, consent feelings and consent cues are fluid and complex. People’s willingness to engage in sexual activity ebbs and flows—and to date most attention has been paid to when a sexual encounter crosses some threshold and becomes unwilling. However, there is plenty of variation in willingness and communication even during “consensual” sexual encounters. These variations may be important for understanding potential theoretically relevant constructs like sexual satisfaction and general sexual well-being.

## **Future Directions and Research Trajectory**

The primary aim of this dissertation was to provide evidence regarding the extent that sexual consent is contextual and varies within people from day to day. Yet, demonstrating that at least half of the variation in sexual consent may be due to contextual factors raises more questions than it answers. This dissertation should be considered a gateway toward research that investigates the antecedents and consequences of sexual consent while accounting for within-person variability. Based on data from this ESM study, I am eager to test several other research questions and disseminate those findings:

Are people's reports of their sexual consent reactive to self-monitoring their sexual consent over the course of an ESM study?

Does consuming alcohol or marijuana prior to engaging in partnered sexual activity affect how people felt or communicated their willingness during that encounter?

Are the types of sexual behavior people engage in at the event-level associated with their internal and external sexual consent?

Does event-level sexual consent predict people's event-level sexual or relationship satisfaction?

Are salient non-sexual trait characteristics (e.g., personality) or state characteristics (e.g., mood) associated with people's sexual consent?

In addition to further examining data from my dissertation, I look forward to designing future studies to continue my research trajectory.

My research primarily investigates the nuances of sexual consent, which is commonly conceptualized to include three components: (1) internal feelings of willingness to engage in sexual activity, (2) externally communicating those feelings of willingness to a potential sexual partner, and (3) perceiving the potential willingness of others to engage in sexual activity based on contextual cues or their communication cues. My research questions will continue to examine how people vary across individual differences and across contexts regarding each of these three aspects of sexual consent.

Given the importance of considering the within-person variation of sexual, I plan to design and implement more ESM studies going forward. However, I have used and will continue to use a diverse range of research methodologies to answer my research questions regarding sexual consent. For example, using content analyses, I have evaluated how sexual consent is portrayed in movies, pornography, and sex education curricula. I plan to build on these findings by experimentally manipulating the content of sexual media to see whether that influences viewers' perceptions of or attitudes toward sexual consent. Further, I have collected cross-sectional dyadic data to investigate how well sexual partners are able to perceive each other's consent communication. I would like to extend those findings by designing an ESM study with couples to test multilevel models that nest time points within people within dyads. Another type of methodology I have used is the staggered vignette protocol; I intend to alter the content of vignettes to manipulate various contextual factors—many of which I will be able to base on the findings from the dissertation data. Finally, I would like to continue my trajectory of designing studies with methodologies I have never used before. For instance, I am interested in conducting a longitudinal study that tracks people from the beginning of a sexual relationship for several months to assess the effects of sexual precedent on sexual consent.

### **Commentary/Closing**

Though my path seemed obscure and at times wayward for many years, I have honed a research identity while completing my PhD with Dr. Jozkowski. Now, on the verge of four graduate degrees and having started a faculty position at the University of Greenwich, I am honored and thrilled to be acknowledged by the academic world as an independent researcher.

Though I approached this project as being just one of many, I don't think there could have been a better dissertation to embody my personal transition to becoming an independent



researcher. In the moment, I didn't realize how my experiences as a graduate student were culminating in this single research endeavor. But from the first study I designed at the University of Arkansas, I was trudging my way toward this dissertation. Reflecting on that daily diary study, one of my biggest takeaways from the PhD experience is that you need to know how to use the right tools to answer the questions you want to answer.

Collecting multiple time points of data is an appropriate tool for investigating the extent that contextual factors are important for sexual consent; however, that in itself isn't enough. For example, the first daily diary study we conducted lacked validated measures to ensure that we were measuring what we wanted to measure, and our data weren't conducive to testing multilevel models. As such, that study did not properly use the right tools to answer whether and how sexual consent varies from day to day.<sup>11</sup>

In this dissertation, I prioritized learning how to use the requisite tools for answering my research question. I didn't only want to use these tools to answer my specific questions, but I also aimed to provide a detailed account of how I developed my measures and tested my multilevel models as a resource for other researchers planning to use ESM to answer their own questions.

Methodological considerations aside, the findings from this dissertation push forward the academic literature on sexual consent. In addition to demonstrating the extent that internal and external sexual consent vary by context, there were consistent patterns between these two dimensions of consent: when people experienced greater levels of internal willingness they were relatively more explicit and more verbal in their consent communication. However, there remain

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<sup>11</sup> Granted, the aim of that study was to assess the association between sexual precedent and sexual consent—rather than the within-person variability of sexual consent. But those open-ended data were valuable in that they provided preliminary evidence that sexual consent varied from one sexual encounter to the next.

countless event- and person-level nuances to consider regarding people's internal and external sexual consent.

In the coming years, researchers—myself included—will continue uncovering the many complexities of sexual consent. As the guest editor of a special issue on sexual consent, I received dozens of submissions and saw first-hand how diverse the current state of research on sexual consent is. I am keen to introduce the findings from this dissertation to the broader academic community and to continue contributing to this body of work throughout my career.

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## APPENDIX

### Appendix A

#### *Cognitive Interviews Summaries*

#### Participant 1 - 3pm on 15 Sep 2019

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Erect/lubricated, eager	Comfortable, secure	Interested	Consensual	Sure, willing	Clear, direct	Subtle, unclear	Verbal signs	Actions
Reason	These are more direct	If comfortable, then everything else	Aroused and turned on don't mean you want to	Consensual captures both parties	Sure is stronger	No confusion with these terms	Easy to understand; Subtle is more in line with consent than unclear	Sounded better than other three	Least likely to be misread
Dislike				Agreed to, consented to	Aware of surroundings	Overt, unambiguous, explicit	Covert, cryptic, implicit, unambiguous	Sentences, words, phrases	

#### Participant 2 - 5pm on 15 Sep 2019

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Lustful	Safe, protected	Aroused	Agreed to	Ready	Clear	Subtle, indirect	Words	Behaviors
Reason	Easier to understand	If safe and protected, then comfortable	Best reflects a beginning step of sexual activity	Both partners would have to agree	First feeling to pop in mind	Easy to see signals if they are clear	Unclear ways to give signals  *changed to unclear when looking at the continuum	Words are better than phrases and verbal signals; sentences are not common	What you do gives consent

Dislike	Flushed, rapid heartbeat	Secure	Committed	Consented to		Overt, consensual	Cryptic, unambiguous		
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**Participant 3 - 6pm on 15 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Eager	Respected, secure, certain	Turned on	Consensual	Sure	Straightforward, obvious	Ambiguous	Words	Nonverbal signals
Reason	Lustful and erect could be uncomfortable for some	Important to be mutually respected	Interested is too polite	Consensual captures being agreed upon	Sure is more definite than the other more mild terms	These are more definite	People can knowingly and purposely use ambiguous symbols; subtle is too vague	Words captures everything else and is most definite; verbal signals can be vague	Nonverbal signals captures everything else
Dislike	Lustful, erect		Interested	Agreed to	Aware of surroundings		Cryptic		

**Participant 4 - 3pm on 16 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Eager	Safe	Turned on	Consented to	Willing	Straightforward	Unclear	Sentences, verbal signals	Behaviors
Reason	It is a better and more gentle word	Best for everybody	Means sexually aroused but is softer	Less familiar with consensual	Sure comes with a level of uncertainty	Doesn't like the others	Well known word; spent too much time thinking about other words	Words cannot communicate enough	Connects everything else
Dislike			Interested	Consensual	Sure	Unambiguous, explicit	Implicit	Phrases	Gestures

**Participant 5 - 1pm on 17 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Lustful	Comfortable, safe	Aroused	Consensual	Willing, ready	Straightforward, direct, clear	Subtle, cryptic	Words	Body language
Reason	Lustful encompassed the other words	Encompasses the other words; wouldn't be comfortable if unsafe	Aroused is more sexual than interested and is a better word than turned on	Consented to feels one-side and willing is less intense	These words seem to be getting at different aspects: willing being more mental and ready being more physical	These are the easiest to understand	Subtle reflects using smalls signs  *changed to cryptic when looking at the continuum	Encompasses phrases and sentences	Captures speaking with your body
Dislike	Rapid heartbeat	Certain	Interested	Consented to		Explicit, unambiguous, overt, obvious	Covert	Signals, phrases	Signals

**Participant 6 - 3pm on 17 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Erect	Comfortable, in control	Aroused	Consensual	Ready	Straightforward, obvious	Subtle, ambiguous	Verbal signals	Nonverbal signals
Reason	Most obvious physically	This words best reflects being willing	Interested is passive; arousal is more physical than turned on	Others seem too legal	Encapsulates other words	These are the biggest no-brainers	The other words have negative connotations	Words is too elementary; phrases are set combinations of words; sentences lacks clarity	The others do not capture facial expressions
Dislike	Flushed		Interested				Implicit	Words, phrases, sentences	Gestures, actions, body language



**Participant 7 - 1pm on 19 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Eager	In control	Turned on	Consensual	Sure	Direct, unambiguous	Unclear	Sentences	Nonverbal signals
Reason	Other words were too scientific	This word is very specific and captures consent	Reflects mental sexual excitement	This word includes both people; consented to sounds like a single person's side. Hear consensual a lot	This word is definite and encapsulates the others, which each reflect only one aspect each	These seem the strongest	Subtle doesn't encapsulate others but shows that you tried  *changed to indirect when looking at the continuum	Sounds weird but the others aren't specific enough  *changed to verbal when looking at the continuum	Other words aren't specific enough
Dislike	Flushed, lustful	Protected	Interested	Consented to		Overt, obvious, explicit	Ambiguous, indirect, implicit, cryptic		

**Participant 8 - 11am on 20 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Lustful	Comfortable	Interested	Consensual	Willing	Obvious	Subtle, unclear	Words	Body language, gestures, actions
Reason	Most applicable	Most applicable	This word is the broadest and encapsulates the others	Broadest and most important	Most definite	Most direct	Subtle means that you were giving signs	Simple and to the point	Seems most about the body and physical communication
Dislike				Consented to		Unambiguous, overt	Covert, indirect, implicit	Communicated my consent verbally	

**Participant 9 - 1pm on 20 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Eager, lustful	Secure	Turned on	Consensual	Sure	Straightforward	Subtle	Words	Actions
Reason	These reflect a nervous anticipation	Encompasses the other words	More emotional and mental; shows that the person likes it	Seems the most mutual	This word indicates that the person has evaluated the situation	Most contextual and implies a clarity of speech and physical direction	This word shows a clear intent; the others do not	This requires that words be said; the others build on it	Incorporates varying degrees of body language
Dislike				Consented to		Obvious, overt, explicit			Nonverbal, overt

**Participant 10 - 3pm on 20 Sep 2019**

	<b>Physical Response</b>	<b>Safety/ Comfort</b>	<b>Arousal</b>	<b>Consent/Want</b>	<b>Readiness</b>	<b>Explicit</b>	<b>Implicit</b>	<b>Verbal</b>	<b>Nonverbal</b>
Like	Eager	Safe	Aroused	Consensual	Sure	Obvious, unambiguous	Subtle, implicit	Verbal signals	Actions, behaviors
Reason	Most encompassing; this word is more comfortable than erect	Least ambiguous	More clinical than turned on, which makes it better for a study	Clearest	This word indicates no ambiguity in ability	The words don't seem to only reflect verbal	Most applicable; brings to mind the best examples	Most open-ended and encompasses more examples	More evocative than nonverbal
Dislike	Lustful, flushed	Protected, in control	Interested	Consented to, agreed to	Aware	Straightforward, explicit, direct	Cryptic, covert	Phrases, sentences	Gestures

## Appendix B

### *Cognitive Interviews Institutional Review Board Approval*



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**To:** Malachi L Willis  
BELL 4188

**From:** Douglas James Adams, Chair  
IRB Committee

**Date:** 08/07/2019

**Action:** Exemption Granted

**Action Date:** 08/07/2019

**Protocol #:** 1907204557

**Study Title:** Wording of Items Related to Sexual Consent

The above-referenced protocol has been determined to be exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or [irb@uark.edu](mailto:irb@uark.edu).

cc: Kristen N Jozkowski, Investigator

Appendix C

*Cognitive Interviews Informed Consent Form*

**INFORMED CONSENT STATEMENT**  
**Malachi Willis MA, University of Arkansas**  
**Kristen N. Jozkowski PhD, University of Arkansas**

The University of Arkansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that participation is completely voluntary and that even if you agree to participate, you are free to withdraw at any time without penalty. Your relationship with the investigators will not be affected in any way if you refuse to participate.

We are conducting this study to better understand how people feel about the questions asked in this survey. The survey is about sexual attitudes and experiences. We are asking you to participate in a one-on-one interview with a University of Arkansas researcher. The interview is expected to take approximately one hour to one and a half hours to complete. You must be at least 18 years old to participate and currently be in a committed sexual relationship.

This interview includes questions about your opinions regarding the questions asked in the survey, the wording of the questions, and how you interpret the questions. If at any time you do not wish to continue, you can ask the researcher to end the interview. You will receive a \$20 e- gift card equivalent for your participation in the interview.

With your permission, we will record this interview; we will not ask any identifying information on the recording. After the interview is transcribed, the recording will be permanently deleted. All efforts will be made to keep your personal information confidential to the extent allowed by law and University policy. Your identity will be held in confidence in reports in which the study may be published and databases in which results may be stored.

Your participation is solicited, although strictly voluntary. If you would like additional information concerning this study before or after it is completed, please feel free to contact the lead researcher, Malachi Willis. At the conclusion of the study, you will have the right to request feedback about the results. You may contact us by email or phone.

Please sign below indicating willingness to participate in this project and that you are over the age of eighteen.

Malachi Willis, MA  
308 HPER Building  
Department of Health, Human Performance, and Recreation  
University of Arkansas  
Phone: 803-716-1021  
Email: mw038@uark.edu

Kristen Jozkowski, PhD  
University of Arkansas  
Email: [kjozkowsk@uark.edu](mailto:kjozkowsk@uark.edu)

You may also contact the University of Arkansas Research Compliance office listed below if you have questions about your rights as a participant, or to discuss any concerns about, or problems with the research.

**The University of Arkansas Research Compliance:**

Ro Windwalker, CIP  
Intuitional Review Board Coordinator  
Research Compliance  
University of Arkansas  
109 MLKG Building  
Fayetteville, AR 72701  
(479) 575-2208  
[irb@uark.edu](mailto:irb@uark.edu)

## Appendix D

### *Cognitive Interviews Questionnaire*

People may have different feelings associated with their willingness to engage in sexual activity. Think about the last time you engaged in sexual activity with your most recent sexual partner. Please indicate the extent to which you agree or disagree that you felt the following during the last time you engaged in sexual activity.

(Strongly disagree, Disagree, Agree, Strongly agree)

---

Physical response items:

I felt **rapid heart beat**.

I felt **flushed**.

I felt **eager**.

I felt **lustful**.

I felt **erect/vaginally lubricated**.

---

Safety/comfort items:

I felt **secure**.

I felt **protected**.

I felt **safe**.

I felt **respected**.

I felt **certain**.

I felt **comfortable**.

I felt **in control**.

---

Arousal items:

I felt **aroused**.

I felt **turned on**.

I felt **interested**.

---

Agreement/want items:

The sexual activity itself felt **consented to**.

The sexual activity itself felt **agreed to**.

The sexual activity itself felt **wanted**.

The sexual activity itself felt **consensual**.

The sexual activity itself felt **desired**.

---

Readiness items:

I felt **ready**.

I felt **sure**.

I felt **willing**.

I felt **aware of my surroundings**.

Interviewer Probes for Internal Sexual Consent Items:

What did these series of feelings seem to be getting at?

Which of these words best captures [insert their answer]?

Can you tell me why you chose this word?

Are there any other words that you think would be better?

Were these words consistent with your experience of being willing to engage in sexual activity?

Were any of these words weird?

Were any of these questions difficult to answer?

(after all internal consent items) Are there any other feelings that you associate with consenting sexual activity?

People may have different ways of communicating their willingness to engage in sexual activity.

Think about the last time you engaged in sexual activity with your most recent sexual partner.

Please indicate the extent to which you used on the following forms of communication to determine sexual consent during the last time you engaged in sexual activity.

(Strongly disagree, Disagree, Agree, Strongly agree)

---

Explicit items:

I used **explicit** signals to communicate my consent.

I used **clear** signals to communicate my consent.

I used **obvious** signals to communicate my consent.

I used **unambiguous** signals to communicate my consent.

I used **overt** signals to communicate my consent.

I used **straightforward** signals to communicate my consent.

---

Implicit items:

I used **implicit** signals to communicate my consent.

I used **subtle** signals to communicate my consent.

I used **unclear** signals to communicate my consent.

I used **ambiguous** signals to communicate my consent.

I used **covert** signals to communicate my consent.

I used **cryptic** signals to communicate my consent.

---

Verbal cues:

I used **verbal signals** to communicate my consent.

I used **words** to communicate my consent.

I used **phrases** to communicate my consent.

I used **sentences** to communicate my consent.

---

Nonverbal cues:

I used **nonverbal signals** to communicate my consent.

I used **actions** to communicate my consent.

I used **behaviors** to communicate my consent.

I used **gestures** to communicate my consent.

I used **body language** to communicate my consent.

Interviewer Probes for External Sexual Consent Items:

How would you define the type of communication being described by these words?

Which are examples of signals of sexual consent that are [insert their answer]?

Which of these words best captures [insert their answer]?

Can you tell me why you chose this word?

Are there any other words that you think would be better?

Are there any other forms of communication that you associate with consenting to sexual activity?

Were any of these words weird?

Were any of these questions difficult to answer?

(after all external consent items) Is there a better word for "signal"?

(back-up probe) For example, cue, indicator, or sign?

(after all external consent items) Are there any other types of communication that you associate with being willing to engage in sexual activity?

Interviewer Probes for No Response cues:

What words would you use to describe instances when people let sexual activity happen without saying anything or resisting?

Do you think that this would count as a type of consent communication?

If so, would it fit into the categories of [insert the word they used for implicit cues] and [insert the word they used for nonverbal cues]?

Refer to this diagram. Where do you think this type of consent communication fits? [Add poles to the axes based on the words they selected for implicit, explicit, verbal, and nonverbal]



## Appendix E

### *ESM Study Institutional Review Board Approval*



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**To:** Malachi Willis  
BELL 4188

**From:** Douglas James Adams, Chair  
IRB Committee

**Date:** 03/16/2020

**Action:** **Expedited Approval**

**Action Date:** 03/16/2020

**Protocol #:** 1912237258

**Study Title:** Within-Person Variability of Sexual Consent

**Expiration Date:** 03/08/2021

**Last Approval Date:**

The above-referenced protocol has been approved following expedited review by the IRB Committee that oversees research with human subjects.

If the research involves collaboration with another institution then the research cannot commence until the Committee receives written notification of approval from the collaborating institution's IRB.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date.

Protocols are approved for a maximum period of one year. You may not continue any research activity beyond the expiration date without Committee approval. Please submit continuation requests early enough to allow sufficient time for review. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study closure.

**Adverse Events:** Any serious or unexpected adverse event must be reported to the IRB Committee within 48 hours. All other adverse events should be reported within 10 working days.

**Amendments:** If you wish to change any aspect of this study, such as the procedures, the consent forms, study personnel, or number of participants, please submit an amendment to the IRB. All changes must be approved by the IRB Committee before they can be initiated.

You must maintain a research file for at least 3 years after completion of the study. This file should include all correspondence with the IRB Committee, original signed consent forms, and study data.

cc: Robert E Davis, Investigator

Appendix F

*ESM Study Informed Consent Form*

**INFORMED CONSENT STATEMENT**  
**Malachi Willis MA, University of Arkansas**  
**Robert E. Davis PhD, University of Arkansas**

The University of Arkansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that participation is completely voluntary and that even if you agree to participate, you are free to withdraw at any time without penalty. Your relationship with the investigators will not be affected in any way if you refuse to participate.

We are conducting this study to better understand people's sexual experiences. You will take a 20-minute survey now and then receive instructions to download the LifeData application onto your phone. Starting on April 10th, 2020, you will receive notifications to complete a survey about your sexual activity 4 times a day for 28 days. These surveys will only take a minute or two to complete. Finally, you will take a 10-minute survey at the end of the 28 days.

All surveys are anonymous; your name will not be tied with any of your answers. You must be at least 18 years old to participate and have daily access to a device supported by iOS or Android.

This survey includes questions about sexual experiences. Some questions may be upsetting or cause embarrassment. If you do not wish to answer a specific question, you may leave it blank. If at any time you do not wish to continue with this survey, you can stop responding to the daily diaries sent to your phone.

Participants may receive e-gift cards to Amazon.com for their study participation (\$40 if they complete at least 85% of the daily surveys or \$20 if they complete at least 50%). Participants may also benefit from self-awareness from their responses. We believe that the information obtained from this study will help us gain a better understanding of sexual experiences, which may help public health and education professionals to better design educational programs and research projects in these areas.

All efforts will be made to keep your personal information confidential to the extent allowed by law and university policy. Your identity will be held in confidence in reports in which the study may be published and databases in which results may be stored.

Your participation is solicited, although strictly voluntary. If you would like additional information concerning this study before or after it is completed, please feel free to contact the lead researcher, Malachi Willis. At the conclusion of the study, you will have the right to request feedback about the results.

By clicking to the next page, you indicate your willingness to participate in this project and that you are over the age of eighteen.

Malachi Willis, MA  
308 HPER Building  
Department of Health, Human Performance, and Recreation  
University of Arkansas  
Email: mw038@uark.edu

Robert Davis, PhD  
University of Arkansas  
Email: red007@uark.edu

You may also contact the University of Arkansas Research Compliance office listed below if you have questions about your rights as a participant, or to discuss any concerns about, or problems with the research.

The University of Arkansas Research Compliance:  
Ro Windwalker, CIP  
Intuitional Review Board Coordinator  
Research Compliance  
University of Arkansas  
109 MLKG Building  
Fayetteville, AR 72701  
(479) 575-2208  
irb@uark.edu

**I have read the above statement, and I understand the purpose of the study as well as the potential benefits and risks that are involved. I understand that participation is voluntary. I understand that significant new findings developed during this research can be shared with the participant. I understand that no rights have been waived by consenting to participate in this study. By clicking to the next page and filling out the survey, I am implying my consent to participate in this study.**

## Appendix G

### *ESM Study Questionnaire (Baseline Survey)*

#### Measures Included:

Sociodemographic items

Sexual history items

Internal Consent Scale (Jozkowski et al., 2014)

External consent items (Willis et al., 2019)

Sexual Experience Survey-Revised (Koss et al., 2007)

Open-ended sexual consent/refusal items

Please select the response choice that most accurately describes you. It is important that you answer honestly and completely.

What is your age in years?

▼ 18 ... 99

How would you describe your racial identity? Check all that apply.

American Indian or Alaska Native

Asian or Asian American

Black or African American

Hispanic or Latin American

Middle Eastern or Middle Eastern American

Native Hawaiian or Pacific Islander

White or European American

A race not listed here: Please specify

What is your household income level?

Less than \$20,000

\$20,000 to \$34,999

\$35,000 to \$49,999

\$50,000 to \$74,999

\$75,000 to \$99,999

Over \$100,000

Are you currently a student?

Undergraduate student

Graduate student

Not a student

What is the highest degree or level of school you have completed?

- Less than a high school diploma
- High school degree or equivalent (e.g. GED)
- Some college, no degree
- Associate degree (e.g. AA, AS)
- Bachelor's degree (e.g. BA, BS)
- Master's degree (e.g. MA, MS, MEd)
- Professional degree (e.g. MD, DDS, DVM)
- Doctorate (e.g. PhD, EdD)

What is your gender?

- Woman
- Man
- Transgender
- A gender not listed here: Please specify

How would you describe your sexual orientation?

- Heterosexual/Straight
- Homosexual/Gay/Lesbian
- Bisexual
- Unsure/Questioning
- An orientation not listed here: Please specify

Who are you sexually attracted to?

- Exclusively females
- Predominantly females and occasionally males
- Predominantly females but more than occasionally males
- Equally females and males
- Predominantly males but more than occasionally females
- Predominantly males and occasionally females
- Exclusively males
- I am not sexually attracted to females nor males

How many sexual partners do you currently have?

- 0
- 1
- 2
- 3+

How would you describe your relationship status with your primary partner?

How long have you been with your primary partner? Years/Months

▼ 0 ... 90 ~ 12

What is your primary partner's age in years?

▼ 18 ... 99

What is your primary partner's gender?

Woman

Man

Transgender

A gender not listed here: Please specify

The following questions refer to sexual behaviors that you may have engaged in with your primary sexual partner. Please indicate which of the following behaviors you and your partner have ever engaged in at least once. (Select all that apply.)

Passionate kissing

I touched their genitals

They touched my genitals

I gave them oral sex

They gave me oral sex

Vaginal sex

Anal sex

Now, think about the most recent time you engaged in sexual activity with your primary partner. Please indicate which of the following behaviors you and your partner engaged in during this most recent experience. (Select all that apply.)

Passionate kissing

I touched their genitals

They touched my genitals

I gave them oral sex

They gave me oral sex

Vaginal sex

Anal sex

People may have different **feelings** associated with their willingness or consent to engage in sexual activity. Think about the **most recent time** you engaged in sexual activity with your primary partner. Please indicate the extent to which you agree or disagree that you **felt** the following during the **most recent time** you engaged in sexual activity.

(Strongly disagree, Disagree, Agree, Strongly agree)

---

Physical response items:

I felt **rapid heart beat**.  
I felt **flushed**.  
I felt **eager**.  
I felt **lustful**.  
I felt **erect/vaginally lubricated**.

---

Safety/comfort items:

I felt **secure**.  
I felt **protected**.  
I felt **safe**.  
I felt **respected**.  
I felt **certain**.  
I felt **comfortable**.  
I felt **in control**.

---

Arousal items:

I felt **aroused**.  
I felt **turned on**.  
I felt **interested**.

---

Agreement/want items:

The sexual activity itself felt **consented to**.  
The sexual activity itself felt **agreed to**.  
The sexual activity itself felt **wanted**.  
The sexual activity itself felt **consensual**.  
The sexual activity itself felt **desired**.

---

Readiness items:

I felt **ready**.  
I felt **sure**.  
I felt **willing**.  
I felt **aware of my surroundings**.

Think again about the most recent time you engaged in sexual activity with your primary partner. Please indicate how you communicated your willingness or consent to engage in this sexual activity during this most recent experience.

(Yes, No)

---

I used direct verbal cues such as saying "I want to have sex."

I used indirect verbal cues (like hints) such as asking my partner to get a condom.

I used direct nonverbal cues such as just starting to do the behavior (e.g., moving my partner's hands toward my genitals; starting to have sex).

I used indirect nonverbal cues such as making eye contact or touching my partner's arm, back, or legs.

I let the behavior happen without resisting or stopping it.

If you are paying attention, please click "yes."

(0 = Not at all, 10 = Very much)

---

I used **straightforward** signals to communicate my willingness to engage in these sexual behaviors.

I used **subtle** signals to communicate my willingness to engage in these sexual behaviors.

I **verbally** communicated my willingness to engage in these sexual behaviors.

I **nonverbally** communicated my willingness to engage in these sexual behaviors.

---

How well do the following statements describe your personality?

(Disagree strongly, Disagree a little, Neither agree nor disagree, Agree a little, Agree strongly)

---

**I see myself as someone who...**

...is reserved

...is generally trusting

...tends to be lazy

...is relaxed, handles stress well

...has few artistic interests

...is outgoing, sociable

...tends to find fault with others

...does a thorough job

...gets nervous easily

...has an active imagination

---



How often do you have a drink containing alcohol?

- Never
- Monthly or less
- 2-4 times per month
- 2-3 times per week
- 4+ times per week

How many units of alcohol do you drink on a typical day when drinking?

Note: 1 unit is typically a half-pint of regular beer, lager, or cider; 1 small glass of low ABV wine (9%); or 1 single measure of spirits (25ml)

- 1-2
- 3-4
- 5-6
- 7-9
- 10+

How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

If you are paying attention, please select "less than monthly."

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

---

The next set of questions refers to sexual behaviors you may have experienced. Please indicate the most recent time you experienced each type of sexual behavior. If you have never experienced this behavior, please select "never."

(Past 30 days, In the last year, In your lifetime, Never)

---

I experienced vaginal-penile intercourse that I did not consent or agree to because I was incapable of giving or resisting due to using drugs, alcohol, or other substances

I experienced vaginal-penile intercourse that I did not consent or agree to because the other person used physical force or somehow made me afraid to say no

I experienced vaginal-penile intercourse that I did not consent or agree to because my refusals to sex were ignored

I experienced vaginal-penile intercourse that I did not consent or agree to because I realized refusing was useless

I experienced sexual behavior other than vaginal-penile intercourse that I did not consent or agree to because I was incapable of giving or resisting due to using drugs, alcohol, or other substances

I experienced sexual behavior other than vaginal-penile intercourse that I did not consent or agree to because the other person used physical force or somehow made me afraid to say no

I experienced sexual behavior other than vaginal-penile intercourse that I did not consent or agree to because my refusals to sex were ignored

I experienced sexual behavior other than vaginal-penile intercourse that I did not consent or agree to because I realized refusing was useless

Did any of these sexual behaviors happen to you one or more times?

Yes

No

I selected "never" for each of these sexual behaviors

What was the sex of the person or persons who did these sexual behaviors to you?

I reported no experiences

Female only

Male only

Both females and males

Have you ever been raped?

Yes

No

In general, how do you consent to sexual activity? In other words, what do you typically **say, do, or feel** to indicate your consent?

---

In general, how do you refuse sexual activity? In other words, what do you typically **say, do, or feel** to indicate your refusal?

---

## Appendix H

### *ESM Study Questionnaire (Daily Survey)*

Response scales ranged from 0 (not at all) to 10 (very much) unless otherwise noted.

#### ALL TIME POINTS...

At the moment, I feel happy.

At the moment, I feel excited.

At the moment, I feel relaxed.

At the moment, I feel satisfied.

At the moment, I feel angry.

At the moment, I feel anxious.

At the moment, I feel depressed.

At the moment, I feel sad.

At the moment, I feel emotionally close to my partner.

At the moment, I feel satisfied with my relationship with my partner.

Since the last beep, I experienced conflict with my partner.

Since the last beep, I communicated with my partner. (in person, via messaging [e.g., texts], via audio call [e.g., phone], via video call [e.g., Skype], I did not communicate with them)

Since the last beep, I engaged in sexual behavior with my partner. (yes, no)

#### IF YES...

Since the last beep, I engaged in the following behaviors with my partner. (passionate kissing, I touched my partner's genitals, they touched my genitals, I gave my partner oral sex, they gave me oral sex, vaginal sex, anal sex)

Who initiated this sexual encounter? (I did, my partner did, we both did, I'm not sure)

During these sexual behaviors, the sexual act itself felt consensual.

During these sexual behaviors, I felt turned on.

During these sexual behaviors, I felt erect/vaginally lubricated.

During these sexual behaviors, I felt comfortable.

During these sexual behaviors, I felt ready.

I used straightforward signals to communicate that I was willing to engage these sexual behaviors.

I used subtle signals to communicate that I was willing to engage these sexual behaviors.

I nonverbally communicated that I was willing to engage in these sexual behaviors.

I verbally communicated that I was willing to engage in these sexual behaviors.

About how many alcoholic beverages did you have before engaging in these sexual behaviors? (0 to 6+)

About how many alcoholic beverages did your partner have before engaging in these sexual behaviors? (0 to 6=)

Did you or your partner use marijuana before or during these sexual behaviors? (I did, they did, we both did, neither of us did)

How likely do you think it is that you will engage in sexual behavior with your partner before the next beep?

IF NO...

Since the last beep, I wanted to engage in sexual activity with my partner.

Since the last beep, sexual activity between me and my partner almost happened. (yes/but I stopped it, yes/but the other person stopped it, yes/but something else stopped us, no)

Since the last beep, about how many alcoholic beverages did you have? (0 to 6+)

Since the last beep, did people around you drink alcohol? (yes, no)

Since the last beep, did you or people around you use marijuana? (I did, people around me did, I did with people around me, no)

Since the last beep, I watched pornography. (yes, no)

Since the last beep, I masturbated. (yes, no)

How likely do you think it is that you will engage in sexual behavior with your partner before the next beep?

## Appendix I

### *ESM Study Questionnaire (Exit Survey for Pilot Study)*

#### Measures Included:

Relationship Status

Effect of COVID-19 Pandemic

Retrospective Sexual Behavior

Closed-ended feedback on participating

Open-ended feedback on participating

For each of the following pairs, please select the term that best describes your relationship with the sexual partner you referred to during the daily surveys.

Casual/Committed

Platonic/Romantic

Not engaged or married/Engaged or married

Not living together/Living together

Not exclusive/Exclusive

Not monogamous/Monogamous

Not girlfriend or boyfriend/Girlfriend or boyfriend

---

Please reflect on the past month or so and indicate how the COVID-19 (coronavirus) pandemic has affected your daily life.

---

Since the pandemic started, has the amount of time you work at home changed?

Working from home more

Stayed the same

Working from home less

Since the pandemic started, has your overall workload changed?

Reduced workload overall

Stayed the same

Increased workload overall

Since the pandemic started, has the amount of time you spend at home changed?

More time at home

Stayed the same

Less time at home

Since the pandemic started, has the amount of stress you feel changed?

- More stress
- Stayed the same
- Less stress

Since the pandemic started, has the amount of in-person interactions (e.g., face-to-face) you have with your partner changed?

- More in-person interactions
- Stayed the same
- Fewer in-person interactions

Since the pandemic started, has the quality of your interactions with your partner changed?

- Better interactions
- Stayed the same
- Worse interactions

Since the pandemic started, has the quality of your interactions with other people changed?

- Better interactions
- Stayed the same
- Worse interactions

Since the pandemic started, has the amount of virtual interactions (e.g., text, phone, video chat) you have with your partner changed?

- More virtual interactions
- Stayed the same
- Fewer virtual interactions

Since the pandemic started, has the amount of in-person interactions (e.g., face-to-face) you have with other people changed?

- More in-person interactions
- Stayed the same
- Fewer in-person interactions

Since the pandemic started, has the amount of virtual interactions (e.g., text, phone, video chat) you have with other people changed?

- More virtual interactions
- Stayed the same
- Fewer virtual interactions

In your own words, how has the COVID-19 (coronavirus) pandemic affected your sex life or your relationship with your partner?

---

---

During the **past 7 days of this study**, on how many days did you engage in each of the following sexual behaviors with your partner? Please answer to the best of your memory.

---

Passionate kissing ▼ 0 days ... 7 days

I touched their genitals ▼ 0 days ... 7 days

They touched my genitals ▼ 0 days ... 7 days

I gave them oral sex ▼ 0 days ... 7 days

They gave me oral sex ▼ 0 days ... 7 days

Vaginal sex ▼ 0 days ... 7 days

Anal sex ▼ 0 days ... 7 days

You were one of the first people to participate in this study! Please reflect on the past week when answering the following questions. Your responses will help us improve the study for future participants.

What did you think of completing the survey four times a day?

Too many daily surveys

Just right

Not enough daily surveys

What did you think of receiving up to two reminder notifications for each daily survey?

Too many reminders

Just right

Not enough reminders

What did you think of the length of the daily surveys?

Too many questions

Just right

Not enough questions

What did you think of the process of downloading the app onto your phone?

Easier than I expected

As easy or difficult as I expected

More difficult than I expected

What did you think of the font size of the daily survey questions on your phone?

Too big

Just right

Too small

(Strongly Disagree, Disagree, Agree, Strongly Agree)

- 
- Participating in this study was **easy**.
  - Participating in this study was **confusing**.
  - Participating in this study was **frustrating**.
  - Participating in this study was **fun**.
  - Participating in this study was **interesting**.
  - Participating in this study was **boring**.

---

Below are some of the statements you responded to in the daily surveys over the past week. Please indicate whether you thought any of them did not make sense to you or sounded awkward. (Select all that apply.)

- At the moment, I feel emotionally close to my partner.
- At the moment, I feel satisfied with my relationship with my partner.
- Since the last beep, I experienced conflict with my partner.
- Since the last beep, I communicated with my partner.
- Since the last beep, I engaged in the following behaviors with my partner.
- Who initiated this sexual encounter?
- During these sexual behaviors, the sexual act itself felt consensual.
- During these sexual behaviors, I felt turned on.
- During these sexual behaviors, I felt erect/vaginally lubricated.
- During these sexual behaviors, I felt comfortable.
- During these sexual behaviors, I felt ready.
- I used straightforward signals to communicate that I was willing to engage these sexual behaviors.
- I used subtle signals to communicate that I was willing to engage these sexual behaviors.
- I nonverbally communicated that I was willing to engage in these sexual behaviors.
- I verbally communicated that I was willing to engage in these sexual behaviors.
- All of these made sense to me, and none of them sounded awkward

---

What about the following statement did not make sense or sounded awkward? How would you improve this statement?

\_\_\_\_\_

In your own words, how was the experience of completing the daily surveys on your phone?

\_\_\_\_\_

What would you change about this study to improve the experience of others?

\_\_\_\_\_

Is there anything else you would like to tell us?

\_\_\_\_\_

---



## Appendix J

### *ESM Study Questionnaire (Exit Survey for Full Study)*

#### Measures Included:

Relationship Status

Effect of COVID-19 Pandemic

Retrospective Sexual Behavior and Alcohol/Drug Use

Open-ended sexual consent/refusal items

Token Resistance to Sex Scale (Osman, 2003)

Illinois Rape Myth Acceptance Scale (Lonsway & Fitzgerald, 1999)

For each of the following pairs, please select the term that best describes your relationship with the sexual partner you referred to during the daily surveys.

Casual/Committed

Platonic/Romantic

Not engaged or married/Engaged or married

Not living together/Living together

Not exclusive/Exclusive

Not monogamous/Monogamous

Not girlfriend or boyfriend/Girlfriend or boyfriend

---

Please reflect on the past month or so and indicate how the COVID-19 (coronavirus) pandemic has affected your daily life.

---

Since the pandemic started, has the amount of time you work at home changed?

Working from home more

Stayed the same

Working from home less

Since the pandemic started, has your overall workload changed?

Reduced workload overall

Stayed the same

Increased workload overall

Since the pandemic started, has the amount of time you spend at home changed?

More time at home

Stayed the same

Less time at home

Since the pandemic started, has the amount of stress you feel changed?

- More stress
- Stayed the same
- Less stress

Since the pandemic started, has the amount of in-person interactions (e.g., face-to-face) you have with your partner changed?

- More in-person interactions
- Stayed the same
- Fewer in-person interactions

Since the pandemic started, has the quality of your interactions with your partner changed?

- Better interactions
- Stayed the same
- Worse interactions

Since the pandemic started, has the quality of your interactions with other people changed?

- Better interactions
- Stayed the same
- Worse interactions

Since the pandemic started, has the amount of virtual interactions (e.g., text, phone, video chat) you have with your partner changed?

- More virtual interactions
- Stayed the same
- Fewer virtual interactions

Since the pandemic started, has the amount of in-person interactions (e.g., face-to-face) you have with other people changed?

- More in-person interactions
- Stayed the same
- Fewer in-person interactions

Since the pandemic started, has the amount of virtual interactions (e.g., text, phone, video chat) you have with other people changed?

- More virtual interactions
- Stayed the same
- Fewer virtual interactions

In your own words, how has the COVID-19 (coronavirus) pandemic affected your sex life or your relationship with your partner?

---

---

During the **past 28 days of this study**, on how many days did you engage in each of the following sexual behaviors with your partner? Please answer to the best of your memory.

---

Passionate kissing ▼ 0 days ... 28 days

I touched their genitals ▼ 0 days ... 28 days

They touched my genitals ▼ 0 days ... 28 days

I gave them oral sex ▼ 0 days ... 28 days

They gave me oral sex ▼ 0 days ... 28 days

Vaginal sex ▼ 0 days ... 28 days

Anal sex ▼ 0 days ... 28 days

During the past 28 days of this study, on how many days did you engage in each of the following behaviors? Please answer to the best of your memory.

---

Have at least 1 alcoholic drink ▼ 0 days ... 28 days

Have at least 5 alcoholic drinks ▼ 0 days ... 28 days

Use marijuana ▼ 0 days ... 28 days

Have at least 1 alcoholic drink before engaging in sexual activity ▼ 0 days ... 28 days

Have at least 5 alcoholic drinks before engaging in sexual activity ▼ 0 days ... 28 days

Use marijuana before engaging in sexual activity ▼ 0 days ... 28 days

---

Do you think the way you consent to sexual activity has changed over the past 28 days? Why or why not?

Do you think the way you refuse sexual activity has changed over the past 28 days? Why or why not?

In general, how do you consent to sexual activity? In other words, what do you typically *say*, *do*, or *feel* to indicate your consent?

In general, how do you refuse sexual activity? In other words, what do you typically *say*, *do*, or *feel* to indicate your refusal?

---

How was the experience of participating in this study? Is there anything we should consider for future studies?

---

Is there anything else that you would like to tell us?

---

---

Respond to the following statements by indicating the degree to which you agree or disagree with the statement. Respond using the following scale for each statement.

(Strongly Disagree, Disagree, Slightly Disagree, Undecided, Neither Agree nor Disagree, Slightly Agree, Agree, Strongly Agree)

---

Women usually say ‘no’ to sex when they really mean “yes.”

When a man only has to use a minimal amount of force on a woman to get her to have sex, it probably means she wanted him to force her.

When a woman waits until the very last minute to object to sex in a sexual interaction, she probably really wants to have sex.

A woman who initiates a date with a man probably wants to have sex.

Many times a woman will pretend she doesn’t want to have intercourse because she doesn’t want to seem too loose, but she’s really hoping the man will force her.

A woman who allows a man to pick her up for a date probably hopes to have sex that night.

If you are paying attention, please select "Strongly Agree."

When a woman allows a man to treat her to an expensive dinner on a date, it usually indicates that she is willing to have sex with him.

Going home with a man at the end of a date is a woman’s way of communicating to him that she wants to have sex.

---

All items rated on a 1 (*not at all agree*) to a 7 (*very much agree*) scale.

---

If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.

Although most women wouldn’t admit it, they generally find being physically forced into sex a real “turn-on.”

If a woman is willing to “make out” with a guy, then it’s no big deal if he goes a little further and has sex.

Many so-called rape victims are actually women who had sex and “changed their minds” after.

Many women secretly desire to be raped.

Most rapists are not caught by the police.

If a woman doesn’t physically fight back, you can’t really say that it was rape.

Men from nice middle-class homes almost never rape.

Rape isn’t as big a problem as some feminists would like people to think.

Rape accusations are often used as a way of getting back at men.  
If a woman goes home with a man she doesn't know, it is her own fault if she is raped.  
All women should have access to self-defense classes.  
It is usually only women who dress suggestively that are raped.  
If the rapist doesn't have a weapon, you really can't call it a rape.  
Rape is unlikely to happen in the woman's own familiar neighborhood.  
Women tend to exaggerate how much rape affects them.  
A lot of women lead a man on and then they cry rape.  
It is preferable that a female police officer conduct the questioning when a woman reports a rape.  
If a woman doesn't physically resist sex—even when protesting verbally—it really can't be considered rape.  
A woman who "teases" men deserves anything that might happen.  
When women are raped, it's often because the way they said "no" was ambiguous.  
Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.  
A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.  
Rape happens when a man's sex drive gets out of control.