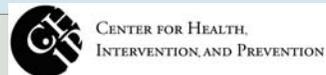


# Safe Sex Attitude Measurement and Intervention in an Immersive VR Context

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## Safe Sex Attitude & Behavior Measurement

- Ask about past behavior
  - Problem: Retrospective bias, asking for conscious (Explicit) thought about an often automatic process
- Ask about intentions (Ajzen, 1991)
  - Problem: intentions don't always = behavior, especially in high impulsivity situations (e.g., drug use)
  - Problem: Mere measurement effect (Levav & Fitzsimmons, 2006)
- Ask about a "proxy" behavior
  - E.g. Condom purchasing
  - Problem: Proxy isn't behavior of interest

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## Sex & Impulsivity

- Many behaviors are thought to act on an unconscious or "Implicit" level
  - Quick
  - Associations of concepts in mind
    - Condoms <--> Good
  - Outside of awareness
  - Best predictors of spontaneous behavior (Dovidio et al., 1997)
- Sex is often impulsive, no conscious thought about condoms
  - Casual partners
  - Environmental cues to impulsivity (Ross et al., 2004)
  - Alcohol / Drug use (MacDonald, Zanna, & Fong, 1998)

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## Embodied Social Cognition

- "Cognitive representations and operations are fundamentally **grounded in their physical context.**" (Niedenthal et al., 2005, p.186)
- "Cognition must be understood in terms of how it functions **under the pressures of real-time interaction with the environment.**" (Wilson, 2002, p. 626)
- Numerous studies have suggested that IVR produces the same emotions and psychological states as could be obtained in the real world (North et al., 1997; Riva, 1998; Vincelli & Riva, 2000)

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## IVR for safe sex attitude measurement

- Presence allows participant to experience emotions, feeling and thoughts similar to a real sex situation
- Attitudes measured in IVR will reflect influence of situational cues to riskiness
- Unobtrusive indicators of attitudes can be measured accurately
  - Approach-Avoidance
    - Length of gaze
    - Distance to partner or condom
    - Time held condom

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## Goals of the study (in progress)

1. Predict risky sexual behaviors from implicit measures of attitudes and approach-avoid behaviors in a virtual environment
2. Change implicit associations through exposure in the virtual environment
  - Conditioning

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## Method

- Virtual environment with bedroom & bathroom
- “Potential sex partner” avatars
- Scenes
  - Bedroom
  - During a party
- Tasks
  - Negotiate condom use
  - Condom use

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## Measures

- Attitudes
  - Implicit
  - Explicit
- Emotions (SafeCOMM, Buck et al., 2004)
- Behaviors in VE
  - Speech
  - Willingness to have sex without condom
  - Approach-Avoid behaviors with condoms
- Intentions to engage in risky sex behaviors

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## Initial Pilot results

- Avatars
  - Attractive  $M=5.1/7$
  - Realistic  $M=4.5/7$
  - Expressive  $M=4.5/7$
  - Attitude Thermometer  $M=70/100$
- Environment
  - Igroup Presence Questionnaire (Schubert, Friedmann, & Regenbrecht, 2001)  $M=4.2/7$
  - Realism  $M=5.0/7$
- Emotions
  - High consistency in emotional expression of avatars

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## IVR as a tool for intervention/training

- Provides a “safe” environment for learning
  - Firefighter Training (Satava, 1995)
  - Phobias (North, North, & Coble, 1997)
  - Others at this conference
- Use to increase positive exposure
  - Eroticize condoms (Scott-Sheldon, Glasford, Marsh, & Lust, in press)
- More immersive than role-play, more private than groups
  - Especially important for private behaviors
- Learning transfers from VR to real world contexts (McComas, Pivik, & Laflamme, 1998)

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## Conclusion

- IVR provide a useful new medium for researchers studying attitudes
  - Especially for private or complex behaviors
- If predictions are confirmed, IVR can also be used to condition implicit attitudes that may impact spontaneous risky behaviors

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## Thank you

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