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Content Analysis of Drug Offenders' Sketches on the Draw-an-Event Test for Risky Sexual Situations

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Objectives: To evaluate the utility of the Draw-an-Event Test for risky sexual situations (DET-RS), a nonverbal memory-based assessment tool used for productions of spontaneous content associated with risky sex. *Methods*: Traditional holistic coding analysis of 298 drug offenders' content productions. *Results*: Content analyses of DET-RS sketches provided increased understanding of substance use and other context preceding risky sexual situations with different types of sex partners.

None of the sketches including drugs depicted condoms, only one of the sketches with alcohol included a condom, and only 2 sketches mentioned sexually transmitted diseases. *Conclusions*: The DET-RS is a useful research tool for generating nonverbal context-specific stimuli associated with risky sexual situations.

Key words: risky sex, HIV risk, draw-an-event-test, drug offenders, content analysis

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The present work evaluated a variant of the Draw-an-Event Test for situations (DET-S)[1] for the production and coding of relatively spontaneous high-risk sexual situations among adult drug offenders. Users of recreational drugs (both intravenous and nonintravenous) tend to have more partners and to use condoms less consistently, placing them at increased risk of acquiring and spreading HIV (see reference for review).[2] Understanding antecedents and the context in which sexual risk-taking behaviors occur among drug offenders is clearly important because this behavior may place one at increased risk for HIV infection. While much research on the antecedents of risky sexual behavior has focused on personality, demographics, or rational cognitive processes such as attitudes and beliefs, this work examines relatively spontaneous cognitions through the use of a production task to increase understanding of contexts associated with risky sexual activity.

The present version of the DET-S al-

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lows for individual productions of salient contextual information associated with risky sexual behavior. The Draw-an-Event Test for situations (DET-S) is one method that has been used for eliciting nonverbal cues of high-risk situations.[1,3] This sketch task is useful for generating empirically verified nonverbal cues for a variety of situations including stimuli associated with reckless driving, drug use, violent activities, and risky sexual events. The task requires that participants sketch scenes portraying events that transpired just prior to a target behavior. Respondents' sketch contents are then analyzed to determine the highest frequency responses for those engaging in a target problem behavior. The drawings from this task can be used to obtain cues of a variety of risk behaviors, including risky sexual behavior, and to provide contextual information and descriptions of situations that precede a risky behavior. Additionally, the best prototypical scenes of a variety of situations can be reproduced for use as picture cues in picture association tests, a variation of word association tasks.[4,5]

Various forms of nonverbal tests are useful research instruments for detecting relatively spontaneous cognitions and eliciting nonverbal high-risk cues for a range of problem behaviors. These tasks elicit nonverbal content that may not be accessible through tests that require only verbal responses. Additionally, the content elicited is unlikely to completely overlap with verbal content. Visual features of events are more likely to overlap with imaginal codes in memory than with verbal codes, and this overlap in processing is important within the principle of transfer appropriate processing and in dual-code theory.[6-8]

Research focusing on health and risk behaviors and nonverbal imagery has shown that it is possible to elicit spontaneous images of target information and verify the nonverbal imagery through a structured sketch task. Stacy et al[1] demonstrated that nonverbal image elicitation was feasible among adolescents, that sketched images could be reliably matched to several known alcohol commercials, and that a sketch task could be used to detect salient, nonverbal features of health-related media. Additionally, nonverbal assessments have been shown to be useful in eliciting cues for subsequent picture association tasks in other areas of health behavior research. Cues obtained through sketches on the Draw-an-Event Test for drug use situations were found to be effective in predicting marijuana use among at-risk adolescents.[9] The DET-S tasks do not require artistic ability and are simple to administer, and the coding of content is reliable. For these reasons, this type of task is useful in various areas of behavior research that focus on memory and nonverbal imagery.

The present work examined the usefulness of the Draw-an-Event Test for risky sexual situations (DET-RS) in generating stimuli associated with risky sexual behavior to help increase our understanding of cues and the context in which sexual risk taking occurs. To evaluate the content productions in the sketch task, we used a traditional content analysis in which the entire sketch, including written labels and drawn objects and concepts provided by participants, was analyzed.

METHOD
Participants
Participants were 515 ethnically diverse adults in drug diversion and drug treatment programs in the Los Angeles area. These individuals were referred to these programs in lieu of being prosecuted for their drug offenses. The sample ranged in age from 18 to 65, with a mean age of 34 years (SD=9.85). Of those participating in the study, 27% were female and 73% were male. Five percent were Asian American, 15% African American, 22% Latino, 49% white, and 9% other minorities. The majority of participants read and speak English only (62%), English better than another language (19%), or English and another language equally (13%).

Thirty-two percent of the present sample had been convicted for driving under the influence of alcohol, 8% for driving under the influence of another drug, 44% for possession of an illegal drug, 6% for sales of an illegal substance, and approximately 10% for various other offenses including writing fake prescriptions, cultivating, and manufacturing drugs. Twenty-nine percent of the sample had used a needle to inject drugs.

Procedure
Participants completed anonymous surveys assessing a variety of spontane-

ous cognitions, demographics, a variety of psychosocial variables, type of sexual partner, and measures of drug use and sexual behavior. Guarantees of anonymity have been found to lead to more valid responses in sensitive surveys.[10,11] Participants were informed that their participation in this research was voluntary and they could withdraw from the study at any time without affecting their standing in the drug education programs.

The DET-RS sketches, which contain both verbal and nonverbal content, were collected as part of the survey administered in the drug diversion and drug treatment programs. Participants were asked to "think about the most recent time that you had sex with a casual partner. A casual partner is someone to whom you are not emotionally committed, including casual acquaintances, new partners, one-night stands, sex for pay, etc." Participants were then instructed to "keep answering about the same occasion, BEFORE you started to get sexual with this casual partner that day. Now, please sketch the things you remember seeing, the first things that come to mind that occurred BEFORE you started to get sexual with this person (objects, people, other things)." Participants had 3 minutes to draw their sketches; when finished, they were asked to "please go back and label, with written words, each object or thing in your sketch. For example, if you drew a house, you would write HOUSE next to this object." Labeling makes artistic ability and coder subjectivity irrelevant, and because labeling occurs subsequent to the sketch, it does not interfere with the generation of the nonverbal image.

Content Analysis

Content analysis consisted of evaluation of written labels, drawn objects and concepts. Substances used, patterns of emotions expressed, and types of activities individuals engaged in prior to becoming sexual with a casual partner were a focus of the analysis.

For the coding of the features of the sketch — that is, attention to everything on the page, whether it was drawn or written – 2 coders were trained and independently coded the sketch data. For each sketch, variables were coded that reflected primary variables of interest in this study – alcohol and other drugs and condoms. Beer and alcohol were coded as one vari-

able because subjects did not always differentiate them, and often they appeared together in sketches, so separating them would not provide much additional information. The drug-related variable included both marijuana and its paraphernalia, and other drugs and paraphernalia. This variable combined all substances other than alcohol because instances of specific drugs were too few to be analyzed separately.

Variables concerning the depiction of humans included (1) the number of people pictured in the sketch, (2) how many people of each gender were pictured, and (3) the facial expressions for each person – smiling, frowning, talking, or no expression. For example, if words were coming out of the mouth of a drawn person and the person was smiling, then the coders coded the individual as smiling and listed the words. Gender was coded with the expression of each person in the sketch if gender was clear (either by labels or drawn features). For example, in a sketch the male was smiling, the female was frowning, and a person of indeterminate gender had no expression. The coder would enter into the computer file "male smiling," "female frowning," and "can't tell / no expression."

Other relevant information regarding high-risk sexual situations was included in the coding of content. For example, whether a condom was mentioned or pictured in the sketch, the issue of safety from disease was mentioned in any form, or whether contraceptives or forms of birth control were mentioned in a sketch were coded. Additionally, all sexual activities pictured were entered as well as the number of people engaged in sexual activity.

RESULTS

Content analyses were conducted on 298 completed sketches. Based on the trained coders' data, the frequencies of alcohol, drugs, and condoms in DET-RS data were calculated. Inter-coder reliability for these variables was calculated as Scott's pi. Acceptable levels for Scott's pi lie within .70 to 1.00. The presence of alcohol (Scott's pi = .84) was found in 76 sketches (25.5%), and the presence of drugs (Scott's pi = .92) occurred in 55 cases (18.5%). Condoms were pictured 6 times, and they were always labeled (2.0%; Scott's pi = 1.00).

Table 1
Presence of Alcohol and
Drugs in Sketches[a]

	Drugs	No Drugs	Total
Alcohol	23	53	76
No Alcohol	32	190	222
Total	55	243	298

Note:
a = χ^2 (1, N=298) = 9.45, P=.002

To better understand the co-occurrence of substance use with risky sexual behaviors, a cross-tabulation of presence of alcohol by presence of drugs was conducted using only the subset of data from participants who drew sketches (N=298; Table 1). This revealed that 7.7% of subjects depicted both alcohol and drugs in their sketches; 63.8% depicted neither substance. Alcohol use alone was depicted in 17.8% of the cases, and drug use alone appeared in 10.7%. None of the sketches including drugs also depicted condoms, and only one of the sketches with alcohol included a condom.

Substance use with various sexual partners was then examined. A closed-ended item in the survey asked participants to indicate the type of sexual partner involved in the risky sexual situation (acquaintance, paid sex partner, or regular partner, including spouse, steady boyfriend/girlfriend, or fiancé/fiancée). Seventy-two percent (N=216) of those who drew a sketch also responded to this item. Cross-tabulation of the content analysis data with the closed-ended responses indicated that alcohol and drug use were about equally likely regardless of sexual partner, though both substances were most likely to occur with paid sexual partners. Alcohol was depicted in 17.9% of cases with regular partners, 22.4% with acquaintances, and 26.9% with paid sexual partners. Drug use appeared in 12.5% of cases for incidents with regular partners and 17.2% with acquaintances, compared to 30.8% of incidents with paid sex partners (Table 2.) Three condoms were included in sketches that represented incidents with acquaintances, one condom in an incident with a paid sex partner, and none with regular partners.

A cross-tabulation of the number of people pictured with the presence of alcohol and drugs indicated significant patterns in the data. Alcohol, drugs, and condoms were most likely to occur in sketches with no people included. The proportion of alcohol use was significantly different depending on the number of individuals pictured, χ^2 (5, N=298) = 42.41, P<.001. Alcohol presence was greatest when no people were included and the sketch pictured only a bottle, can, or glass (57.1%, n=28). The second highest occurrence of alcohol appeared when there were 5 or more people in the sketch (45.8%, n=11), likely because the content analysis indicated that these scenarios pictured parties or bars. Drugs appeared in 49.0% (n=24) of the sketches without people, χ^2 (5, N=298) = 36.90, P<.001. When individuals were drawn, drugs were included in about 10% of the cases, regardless of the number of people. The appearance of condoms in sketches was greatest when no people were pictured (5 of the 6 condoms were in these types of sketches), with the condoms often the main focus of the sketch.

The depiction of consequences of risky sexual activity was treated as 3 separate variables. However, no sketches included any mention or depiction of safe or safer sex, nor did they include birth control or pregnancy. The third consequence variable was sexually transmitted diseases, including HIV/AIDS (Scott's pi = .98). Only 2 sketches mentioned sexually transmitted diseases (STD). One of these sketches included a condom, and the female participant drew a thought balloon that contained the words "STD or AIDS?" The other sketch had AIDS written in the sketch with no condom mentioned or drawn.

To better understand the participants' emotions associated with risky sexual behavior, we coded the facial expression of the people shown in the sketches (Scott's pi = .73). Most of the participants did not indicate an expression on the figures they identified as themselves (65.9%, n=141), 26.2% (n=56) were smiling, and 5.6% (n=12) were frowning. No clear pattern of emotions emerged when analyzed with presence of drugs, alcohol, condoms, or type of sexual partner.

DISCUSSION

This is a first attempt to evaluate the

Table 2
Use of Alcohol or Drugs by Type of Sexual Partner

	Acquaintance	Regular Partner	Paid Sex Partner	Total
Alcohol	30	10	7	47
No Alcohol	104	46	19	169
Drugs	23	7	8	38
No Drugs	111	49	18	178

usefulness of the DET-RS in characterizing risky sexual situations among a high-risk sample of drug offenders. This task provides a nonverbal means of understanding context that incorporate a variety of elements related to risky sexual situations. The cues produced (both verbal and nonverbal) in this task include a number of features of risky sexual situations (eg, alcohol and other drug use, physical objects, social events, etc) that may not be generated in a survey through typical self-report measures. This task can be extended for use in characterizing a variety of situations and problem behaviors and is useful in prevention interventions assessing nonverbal images related to program skills or relatively spontaneous content associated with a variety of situations. Further, the DET-RS data can be used in conjunction with closed-ended questionnaire items to better understand patterns in the data.

Many of the participants in the present sample drew carefully detailed sketches that included facial expressions, which suggests the way they were feeling during the episode. Participants were not specifically asked to provide emotions in the sketches, but inclusion of this content allows researchers to better understand context of risky sexual situations (eg, whether sex was spontaneous, coercive, or something else, when taken in consideration with the rest of the data). Knowing the situations in which at-risk populations are likely to engage in risky sex – and their willingness or reluctance to do so – would increase the likelihood that successful persuasive messages could be developed.

There are limitations to the DET-RS method. First, not all of the drug offenders drew sketches as instructed. However, in any survey situation there are items that are unanswered, but the sketch task does involve self-generating information that might require more effort than responding to closed-ended items. Second, some sketched items can be difficult to identify unless they are labeled; the sketches of condoms are a good example of this type of problem. The closed-ended items do provide some indication of whether condoms were used, but ideally these would be included in the sketch as well.

Aside from the potential richness that the DET-RS task could add to health promotion campaigns, our data also provide important information about how at-risk individuals experience risky sexual behavior. A portion of the drug offenders indicated that they were likely to use alcohol and other drugs in such a situation (and not at all likely to include a condom in the mix), suggesting a need to increase memorable condom-use messages linked with risky sexual situations among this at-risk population. It is somewhat surprising that the type of sexual partner involved in a casual sexual encounter was not important in predicting alcohol use in our sample. Many studies report alcohol use in situations to be associated with risky sex, including casual sexual partners and multiple sex partners (for review see references).[2,16] It is possible that this association was not seen in this study because the drug offender participants' use of alcohol is so frequent that there is a ceiling effect.

Finally, it should be noted that only 2 of the sketches in the present sample included any mention of disease (2 mentioned HIV/AIDS, one adding STD's), which suggests a need for education efforts in the present high-risk sample to create meaningful, specific linkages between risky sex and health consequences.

Future research may use the DET-RS to evaluate relatively spontaneous cognitions related to risky sex prior to health education programs and then following implementation of an intervention. One would expect that following program exposure, the content of the intervention would be more readily available and consequently depicted in the DET-RS sketch content (eg, an increase in condoms and fewer alcohol or drug items drawn). This task could benefit assessment of program effects. For example, the DET-RS may be a useful tool in assessing whether image content consistent with a target behavior (eg, risky sex) becomes less likely (eg, drug use and risky sex) or more likely (eg, increased condom use and awareness) following prevention programs and health education.

CONCLUSION

Results of the content analyses of the Draw-an-Event Test for risky sexual situations (DET-RS) provided key information on the salience of stimuli associated with high-risk sexual situations. This sketch task is an example of a wide range of feasible assessments that focus on relatively spontaneous cognitions likely to influence behavior. This task is a useful addition to self-report measures of a variety of risk behaviors, and variations of this task are useful assessment tools for other areas of research and practice. The content generated by participants on this task may help inform researchers about risky sexual behavior as well as a variety of other risk behaviors.

Acknowledgment

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