*Psychiatry, Psychology and Law*, 2017
Vol. 24, No. 3, 392–409, http://dx.doi.org/10.1080/13218719.2016.1247639

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# I Don't Like the Cut of your Jib: Perceived Facial Masculinity as a Cue to Criminality

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Previous research has established that the appearance of criminal suspects and defendants can affect subsequent legal decisions. Specifically, researchers have proposed that (1) masculine suspects are believed to commit more stereotypically male crimes (e.g., burglary), (2) masculine suspects are believed to commit more violent crimes (e.g., assault), and (3) masculinity is a general cue for committing crime. The current study sought to test these competing hypotheses regarding masculine appearance and perceived criminality. Across three studies, participants read a brief crime scenario and were asked to select out of a lineup the suspect they believed had committed the crime. Suspect masculinity and type of crime were manipulated to determine whether the degree of masculinity influenced whether participants believed they had committed the crime. Results showed that participants consistently associated masculinity with committing violent crime and showed some evidence for the general criminality hypothesis on secondary measures. These findings have important implications regarding law enforcement, eyewitness and juror bias, and legal decisions.

**Key words:** bias; facial masculinity; stereotypes; stereotypic crime; violent crime.

It is well known that the majority of criminal offenders in the United States are men. In 2013, approximately 83% of the correctional population was male (Glaze & Kaeble, 2014), while roughly 71% of crimes against persons (e.g., assault, homicide) were perpetrated by men (FBI, 2013). Explanations of this disparity range from social-cognitive (Bennett, Farrington, & Huesmann, 2005) to developmental (Hayslett-McCall & Bernard, 2002) differences between men and women. Whatever the cause, the strong association between males and crime may have consequences for legal decision-making. More specifically, masculine-appearing individuals may experience greater suspicion of having committed a crime. Such assumptions could result in law enforcement, eyewitness, and juror bias.

Exactly how masculine appearance could bias decision-making in criminal cases is a topic of debate. It has been documented that individuals hold criminal stereotypes that specify common criminal characteristics, such as the presence of facial tattoos (Funk & Todorov, 2013) and the gender of a typical offender (MacLin & Herrera, 2006). Additionally, Ward, Flowe, and Humphries (2012) found that males were more likely to be convicted of a stereotypic male crime, such as burglary. This evidence suggests that masculinity stereotypes may lead individuals to blame more masculine individuals for stereotypic male crimes. Although Ward and colleagues (2012) examined the relationship between masculinity and crimes varying in male stereotypicality (i.e., burglary, child

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abuse, and fraud/forgery), they did not examine other crimes that are highly related to perceived masculinity of a suspect, such as violent crimes.

Masculinity is strongly associated with aggression and violence. In human and nonhuman animal studies, links have been found between physical cues, masculinity, and aggression (Dabbs & Hargrove, 1997; Fink et al., 2005; Trut, 2010). For example, aggressive individuals are more likely to be perceived as masculine (Penton-Voak & Chen, 2004). Thus, the masculine appearance of criminal suspects may provide a physical cue for the propensity to commit *violent* crimes, as opposed to a stereotypically male crime, such as burglary. In this case, investigators may be more likely to suspect masculine-appearing individuals of committing a violent crime.

A final possibility is that individuals may be more likely to suspect masculine-appearing suspects of committing any type of crime. For example, Ward et al. (2012) also found that masculine suspects (regardless of gender) were more likely to be convicted across all crimes presented. Individuals have strong expectations that the typical criminal is likely to be male, and this expectation holds across several different crime scenarios (Greenberg, Westcott, & Bailey, 1998; MacLin & Herrera, 2006). In other words, masculinity may activate the concept of committing all types of crime.

The present research attempts to further clarify the role of masculinity in assessments of criminality. Ward et al. (2012) showed preliminary evidence that suspect masculinity is related to perceptions of committing a male-stereotypic crime and crime in general. Although Ward et al. manipulated the male stereotypicality of crimes, they did not vary the level of violence. Yet, there is ample evidence that aggression and violence are also associated with masculinity. Therefore, in our research we included stereotypic and violent crimes to more directly test whether suspect masculinity is related to male-stereotypic or violent crimes. Specifically, we examined whether masculinity is related to the likelihood that an individual committed a male-stereotypic crime, a violent crime, or any type of crime. We first discuss research in support of each of these predictions, and then report a series of studies in which suspect masculinity and type of crime were systematically varied.

### *Group-Based Crime Stereotypes: Masculinity and Expecting Male-Stereotypic Crime*

Numerous studies demonstrate that membership in certain groups is stereotypically associated with committing specific crimes. Specific crimes are perceived as stereotypical for certain races (Gordon, 1993; Gordon, Michels, & Nelson, 1996; Skorinko & Spellman, 2013; Sunnafrank & Fontes, 1983; Willis Esqueda, 1997), age groups (Skorinko & Spellman, 2013), SES level (Skorinko & Spellman, 2013), and sex (Skorinko & Spellman, 2013; Ward et al., 2012). For example, men are seen as more likely to commit burglary, robbery, rape, assault, and domestic violence than are women, whereas women are more likely to be seen as involved in prostitution (Skorinko & Spellman, 2013; Ward et al., 2012).[1] Ward et al. (2012) further argued that a suspect's facial masculinity might prompt expectations of committing specific crimes. For example, a suspect who appears highly masculine might trigger the expectation that they had committed a stereotypically male crime. On the other hand, a suspect with a more feminine appearance might lead to the expectation that a stereotypically female crime had been committed.

Moreover, when group membership and expected crime match, a *stereotype congruency effect* can occur, with important consequences for decision-making. Research consistently shows that individuals accused of committing stereotype-congruent crimes are more likely to be found guilty or are punished more severely than are individuals suspected of stereotype-inconsistent or stereotype-irrelevant crimes (Gordon, Bindrim, McNicholas, & Walden, 1988; Gordon, 1993; Jones & Kaplan,

2003; Mazzella & Feingold, 1994; Skorinko & Spellman, 2013; Ward et al., 2012). In part, these biased judgments occur because individuals (1) make dispositional attributions (i.e., internal, stable, responsible) for those suspected of committing stereotype-consistent crimes, (2) examine fewer pieces of criminal evidence in mock juror settings when crime and group membership are congruent, and (3) prefer information that confirms the criminal stereotype (Jones & Kaplan, 2003).

Finally, crime stereotypicality can affect memory. For example, Skorinko and Spellman (2013) found that participants made more errors in recalling a suspect's race in stereotype-incongruent cases (e.g., African-American man accused of embezzlement) than stereotype-congruent crimes (e.g., African-American man accused of burglary). Furthermore, these mistakes in memory were often in line with the stereotype. That is, individuals erroneously recalled the race of the suspect as consistent with the stereotype of the crime (e.g., misremembering that it was an African-American man who committed the assault rather than a European-American). Therefore, memory can be biased by stereotype content and subsequent expectations (see also Allport & Postman, 1947). Taken together, evidence suggests that facial masculinity may facilitate an expectation that the suspect committed male-stereotypic crimes (Ward et al., 2012). Masculine appearance could therefore result in higher conviction rates and greater punishment for stereotype-congruent crimes.

### *Masculinity, Testosterone, and Aggression: Masculinity as a Cue to Violent Crime*

A second possibility is that masculinity is a cue for the propensity to commit violent crimes. In our evolutionary past, it may have been beneficial to recognize certain situational and individual cues predicting victimization, such as fearing strangers (Buss & Duntley, 2008; Duntley & Shackelford, 2008). As these cues to victimization have been reliably repeated in our evolutionary past, potential victims learned to avoid certain dangerous situations. Following this evolutionary explanation, masculine features of a criminal perpetrator may be a cue to perceived traits like aggression, leading to the proximal assessment of potential violent victimization. Testosterone has been associated with masculine features (Fink et al., 2005; Lefevre, Lewis, Perrett, & Penke, 2013; Marečková et al., 2011; Penton-Voak & Chen, 2004), with a propensity for committing aggressive behaviors, and with criminality (Dabbs & Hargrove, 1997). As such, if masculine facial features are characteristic of people high in testosterone, and testosterone is predictive of criminal or aggressive behavior, it may have been important to identify such cues in order to avoid becoming a victim of a violent crime. Furthermore, individuals might then perceive masculinity as a cue to a suspect's propensity to commit violent offenses.

In nonhuman animal models, distinct physical traits have been recorded for aggressive versus domesticated animals, such as floppy ears and shorter legs and tails in docile foxes (Trut, 2010). If nonhuman animals express traits that are related to their aggressive behavior, humans, too, may express differing physical features that act as cues to particular behavior, such as aggressive or criminal tendencies. In humans, testosterone is related to distinct facial features, such as wider cheekbones, jaw, and chin, and increased protrusion of the eyebrow (Fink & Penton-Voak, 2002), and those with higher levels of testosterone are perceived as more masculine (Penton-Voak & Chen, 2004; Pound, Penton-Voak, & Surridge, 2009). Thus, higher testosterone might produce specific facial characteristics, which then communicate specific information.

Testosterone has also has been linked to aggressive behavior. A review by Dabbs (1993) found that testosterone is correlated with dominant and aggressive behavior, facial expressions perceived to be unfriendly, and the behavior of violent criminals. For example, higher levels of testosterone have been found

among sexual and violent male offenders compared to nonviolent offenders (Dabbs, Carr, Frady, & Riad, 1995), and increased testosterone was significantly associated with increased aggressive behavior among female inmates (Dabbs & Hargrove, 1997).

Carre, McCormick, and Mondloch (2009) found a more direct link between masculinity and aggression: facial width-to-height ratio (characteristic of male faces) was positively associated with aggression estimates from participants, and aggression estimates were positively correlated with the actual aggressive behavior of the person depicted in the photo. Furthermore, when presented with photos of registered sex offenders, participants rated offenders who had committed violent crimes as more violent than individuals who had committed nonviolent crimes (Stillman, Maner, & Baumeister, 2010). Given the research presented on masculinity and violence, masculinity might act as a cue to aggression leading to the proximal assessment of committing violent crimes. As we might be more sensitive to masculine cues relating to violent behavior, masculine suspects might then be more likely to be convicted of violent crimes.

### *Masculinity and General Criminality: Masculinity as Cue to General Criminal Tendencies*

Although this evidence suggests that observers are able to identify accurately an offender's violent level of offence, it is still unclear whether masculine criminal suspects are convicted at a higher rate for violent crimes, or any crime in general. For many types of deviant behavior there are costs to a victim. It has been proposed that victims have developed counteradaptations in response to deviant behavior, which aid in victim survival (Buss & Duntley, 2008; Duntley & Shackelford, 2008). Costs to a victim (such as death, eliminating future chances for reproduction) force selection pressures for certain counteradaptations to develop, such as overestimating the likelihood that one will be robbed (Buss & Duntley, 2008). Those attempting to avoid or minimize victimization are vigilant of cues relevant to threat, and, as such, may be more likely to use cues of masculinity (e.g., masculine facial features) to anticipate victimization. Determining whether masculinity acts as a cue to a very specific type of crime (such as a violent offense), or to all types of crime, is a central goal of the current studies. If masculinity has been reliably linked to any type of deviant behavior in the past, these cues are more recognizable to potential victims, and, as such, may predict that masculinity is associated with committing crime in general. As a result, masculinity may cue expectations that the individual would commit any type of crime. In this case, we should see that masculine suspects are convicted at higher rates for any type of crime, compared to less masculine men.

### *Comparing and Contrasting Alternative Hypotheses*

The bodies of literature presented each predict a specific outcome regarding how suspect masculinity influences judgments of guilt. In one of the few studies directly comparing these hypotheses, Ward et al. (2012) examined whether individuals assume that male-stereotypic crimes are more likely to be committed by suspects with masculine facial features. They proposed that masculinity may have become part of the criminal stereotype, and, as such, acts as a reliable indicator of committing a stereotypic male crime. Thus, they predicted that masculine males who committed a male-stereotypic crime would be convicted at a higher rate compared to those who had committed nonstereotypically male crimes. In their study, participants read one of three crime scenarios varying in male stereotypicality (burglary, child abuse, and fraud/forgery) and were subsequently shown three photographs of male and female individuals varying in masculinity. Each suspect photo was shown individually and was rated on perceived guilt. Overall, masculine

suspects were more likely to be seen as guilty than were less masculine suspects, regardless of suspect sex. This finding suggests that masculinity acts as a cue to committing crime in general. Further, within the burglary condition, female suspects were given lower guilty ratings compared to the male suspects, suggesting that males were more likely to be believed to be guilty of a stereotypic male crime. Thus, Ward and colleagues (2012) only found partial support for the stereotype hypothesis. Males were found guilty more often for the stereotypic male crime, burglary, but masculinity was also indicative of committing crime in general.

Several methodological changes to Ward and colleagues' (2012) study would help clarify the role of masculinity in judgments of guilt. First, a violent crime was not presented as part of the crime manipulation. Thus, the notion that masculinity serves as a cue to aggression was not tested. Additionally, the study design did not actually allow for an examination of the interaction of crime and level of masculinity, only the overall effect of masculinity. Thus, the study methodology was not well suited to teasing apart whether masculinity acts as a cue to stereotypic, violent, or general crime. Finally, Ward and colleagues (2012) selected their photographic stimuli from a set of mugshots collected online. They unfortunately did not control for other factors that could be related to guilt judgments – for example, the photos could have also differed in perceived attractiveness, intelligence, or background.

The current studies therefore sought to distinguish whether masculinity is related to stereotypic male crime, violent criminal behavior, or general criminal behavior. Participants read one of three brief crime scenarios varying in male stereotypicality (modeled after those used in Ward et al., 2012), including a violent crime. Specifically, the selected crimes were stereotypic and violent (assault), stereotypic but nonviolent (burglary), or nonstereotypic (fraud). Subsequently, participants were asked to choose the person they believed had committed the crime from photos of suspects of varying masculinity. With this design, we were able to examine guilt judgments of male suspects who differed in level of masculinity within each crime.

Several other methodological improvements were made to Ward and colleagues' (2012) design. First, we used standardized photographs from previous research (Meissner, Brigham, & Butz, 2005). All individuals wore the same t-shirt and stood in front of the same background, limiting individual differences that may exist when using mugshots. Additionally, face-morphing software (Abrosoft's FantaMorph) was used to create moderately masculine faces derived from high-masculine and low-masculine faces, to better control the characteristics of the stimuli. With this improved methodology, we hoped to extend previous work by providing a cleaner test of whether masculinity is a cue to all crime or only to particular types of crime.

Across three studies, we examined the role of masculinity and perceived commission of crime. Consistent with strong inference (see Platt, 1964), three competing hypotheses were assessed within these studies:

(1) Male Stereotype Hypothesis: If masculinity is a cue to committing stereotypic male crime, we expected to find an effect of masculinity only for a male-stereotypic crime. Specifically, the more masculine suspect would be: (1) more likely to be picked as the likely perpetrator in a lineup, and (2) seen as more likely to offend again for male-stereotypic crimes (i.e., burglary) compared to nonstereotypic crimes (i.e., fraud).
(2) Aggression Hypothesis: If masculinity acts as an advertisement for the proximal assessment of potential violent behavior, we expected to find an effect of suspect masculinity only for violent crimes. Specifically, the more

masculine suspect would be: (1) more likely to be picked as the likely perpetrator in a lineup, and (2) seen as more likely to offend again for a violent crime (i.e., assault) compared to nonviolent crimes (i.e., fraud and burglary).

(3) General Criminality Hypothesis: If masculinity is a cue to general criminality, we expected to find an effect of masculinity across all types of crime. More specifically, a more masculine suspect would be: (1) more likely to be picked as the likely perpetrator in a lineup, and (2) seen as more likely to offend again across all crimes (i.e., burglary, assault, and fraud).

## Pilot Studies

### *Scenario Pilot Study*

Thirty participants (13 female, $M_{age} = 35.93$ years) were recruited from Amazon's Mechanical Turk (MTurk) to evaluate potential scenarios for the main study. Participants read four descriptions of a crime and the arrest of a suspect. The crimes were: burglary, assault, identity theft, and one of two types of check fraud (see Appendix for crime vignettes). One version of the check fraud crime was neutral, whereas the other was designed specifically to be consistent with a female stereotype. Participants were asked to indicate on seven-point scales (1 = *very unlikely* to 7 = *very likely*) the likelihood that the crime was committed by a man and the likelihood that the crime was committed by a woman. They also indicated in a forced choice whether the crime was more stereotypical of a male or a female perpetrator. Participants also rated the seriousness of the crime on a ten-point scale (1 = *not at all* to 10 = *very*). Finally, they were asked to assume the suspect was found guilty and then recommend a jail sentence (in years) and a fine (in dollars) based on state statutes. Descriptive statistics are presented in Table 1. Preliminary analyses revealed no differences between the two check fraud cases ($F$s < 1, ns), and so we collapsed the data across these two conditions. Preliminary analyses also revealed that identity theft was rated as a much more serious crime and was punished with longer sentences and greater fines than were the other crimes. Moreover, identity theft was rated as moderately stereotypical of men and did not differ from assault on the measures of stereotypicality. Therefore, identity theft did not appear to be a viable type of case for our purposes.

We subsequently focused our analyses on the three other cases. Burglary was seen as more likely to be committed by a man (and less likely to be committed by a woman) than was assault, $F$s > 6.30, $p$s < .02, $d$ >

Table 1. Crime pilot.

| | Fraud | | Burglary | | Assault | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Stereotypical of a man | 4.07 | 1.34 | 5.83 | 1.09 | 4.87 | 1.59 |
| Stereotypical of a woman | 5.07 | 1.39 | 2.70 | 1.37 | 3.83 | 1.60 |
| Likely committed by woman | 0.67 | 0.48 | 0.00 | 0.00 | 0.30 | 0.47 |
| Confidence | 8.23 | 2.16 | 8.40 | 1.94 | 8.63 | 1.79 |
| Seriousness | 6.20 | 2.35 | 6.83 | 1.64 | 6.20 | 1.92 |
| Years | 2.59 | 1.96 | 3.45 | 2.38 | 2.38 | 2.45 |
| Fine | 4103.90 | 2745.04 | 4144.10 | 2851.08 | 3306.63 | 2817.42 |

0.93, and check fraud, $F$s > 24.38, $p$s < .001, $d$ > 1.83. Assault was seen as more likely to be committed by a man (and less likely to be committed by a woman) than was check fraud, $F$s > 5.63, $p$s < .03, $d$ > 0.88. Likewise, participants were more likely to indicate that the burglary was stereotypical of a man, relative to the assault or fraud cases, $F$s> 12.42, $p$s< .01, $d$ > 1.31. They were also more likely to indicate that the assault was stereotypical of a man compared to the check fraud case, $F$ (1, 29) = 9.02, $p$ = .005, $d$ = 1.12. Thus, burglary was seen as most stereotypically male, followed by assault, whereas check fraud was seen as neutral or weakly stereotypical of female perpetrators.

Confidence that the suspect had committed the crime was equivalent across all three scenarios, $F$s < 1.96, $p$s > .17, $d$ < 0.52. Burglary was perceived to be more serious than assault, $F$(1, 29) = 5.37, $p$ = .028, $d$ = 0.86, and marginally more serious than check fraud, $F$(1, 29) = 3.60, $p$ = .07, $d$ = 0.70. Assault and check fraud did not differ in seriousness, $F$(1, 29) = 0.00, $p$ = 1.00, $d$ = 0.00. Similarly, burglary was punished by a longer jail sentence than check fraud, $F$(1, 29) = 7.79, $p$ <.01, $d$ = 1.04, and a marginally longer jail sentence than was assault, $F$(1, 29) = 3.81, $p$ = .06, $d$ = 0.72. Assault and check fraud did not differ, $F$(1, 29) = 0.24, $p$ = .63, $d$ = 0.18. Burglary was punished with a marginally higher fine than assault, $F$(1 ,29) = 2.85, $p$ = .10, $d$ = 0.63, but did not differ from check fraud, $F$ < 1, ns, $d$ = 0.03. Check fraud was punished with a marginally higher fine than was assault, $F$(1, 29) = 4.02, $p$ < .06, $d$ = 0.74. Thus, burglary tended to be seen as more serious and received greater punishments, whereas assault and check fraud were comparable in this regard.

### *Picture Pilots*

From a larger set of photographs previously collected by Meissner et al. (2005), the researchers nominated six high-masculine and six low-masculine faces. These faces were presented to participants recruited from MTurk, $N$ = 39 (14 female, $M_{age}$ = 28.92). Participants rated each face on a number of traits, including masculinity, attractiveness, intelligence, honesty, and aggressiveness. Ratings were made using ten-point scales (1 = *not at all* to 10 = *very*). Based on these ratings, we selected three high-masculine photos (all $M$s > 8.00) and three low-masculine faces (all $M$s < 5.50) that were roughly equivalent in attractiveness. Next, the selected high- and low-masculine faces were randomly paired and morphed to create three moderately masculine faces. These faces were then rated by a different sample of participants ($N$ = 25; 10 female, $M_{age}$ = 31.52). The morphed faces were rated as moderately masculine ($M$s ranging from 6.40 to 7.28), as desired.

## Study 1

### *Participants*

For Study 1[2], 120 participants were recruited from MTurk and were paid $0.30. Seven (six male, one female) participants were removed from the analysis for answering one of the two manipulation check items incorrectly (remaining $N$ = 113; 45 female, $M_{age}$ = 32.02).

### *Method*

Participants viewed one of three crime scenarios: burglary (male-stereotypic, nonviolent), assault (male-stereotypic, violent), or check fraud (nonstereotypic, nonviolent). In each scenario, three pictures were shown as potential suspects of the crime: high-masculine, low-masculine, and moderately masculine. Suspects high in masculinity and low in masculinity were matched on attractiveness. The moderately masculine suspect was a morphed image that did not contain either of the selected high- or low-masculinity photographs. Pilot ratings for these photos are presented in Table 2.

Table 2. Pilot ratings of suspects used in Study 1.

| | Low | | Moderate | | High | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Masculinity | 4.82 | 1.94 | 6.40 | 1.41 | 8.28 | 1.50 |
| Attractiveness | 4.08 | 1.97 | 5.44 | 2.10 | 3.90 | 1.97 |
| Intelligence | 5.77 | 1.72 | 5.44 | 1.83 | 4.82 | 1.78 |
| Honesty | 5.46 | 1.88 | 5.64 | 1.85 | 4.56 | 1.54 |
| Aggressiveness | 3.08 | 1.51 | 3.56 | 1.76 | 6.23 | 1.87 |

After reading the scenario, participants were asked to pick which of the three suspects pictured had most likely committed the crime. Furthermore, they were asked several manipulation check questions ('In the scenario you just read: what was the crime the suspect was accused of? How were the police made aware of the crime?') and rated their confidence on the rendered verdict (1 = *not at all confident* to 10 = *very confident*). [3]

Subsequently, a picture of each suspect was presented in isolation, and participants were asked to rate each picture on masculinity (1 = *not at all masculine* to 10 = *very masculine*) and competence (1 = *not at all competent* to 10 = *very competent*).

### *Results*

Preliminary analyses revealed no effects of participant sex, all *p*s > .15. Thus, we do not discuss this variable further.

#### *Likelihood of Having Committed the Crime*

Choice of the suspect thought to have committed the crime was submitted to a chi-square test of association, see Table 3. The overall effect of crime on suspect selection was significant, $\chi^2(4) = 16.00$, $p = .003$, $w = .37$. Within the assault condition, the high-masculine suspect was most likely to be selected, $\chi^2(2) = 30.40$, $p < .001$, $w = .50$. There was no reliable difference in suspect selection within the burglary condition, $\chi^2(2) = 1.40$, $p = .50$, $w = .11$, or the fraud condition, $\chi^2(2) = 2.74$, $p = .25$, $w = .15$.

Table 3. Choice Study 1.

| Masculinity | Fraud | Burglary | Assault | Total |
|---|---|---|---|---|
| Low | 16 | 14 | 3 | 33 |
| Moderate | 8 | 10 | 5 | 23 |
| High | 14 | 16 | 27 | 57 |
| Total | 38 | 40 | 35 | 113 |

Participants were equally confident in their selection across crimes ($M = 4.49$, $SD = 2.31$), $F(2,110) = 0.72$, $p = .49$.

#### *Likelihood of Re-offending*

A 3 (Crime) × 3 (Masculinity) mixed-measures ANOVA was conducted on perceived likelihood of re-offending. The main effect of crime was not significant, $F < 1$, ns. The main effect of masculinity was significant, $F(4, 220) = 25.21$, $p < .001$, $d = 1.35$, but was qualified by a significant Crime × Masculinity interaction, $F(4, 220) = 3.61$, $p = .007$, $d = 0.51$ (see Table 4). Planned contrasts were therefore conducted within crime condition. Within the assault condition, the high-masculine suspect was perceived to be more likely to offend again than the low-masculine suspect, $F(1, 34) = 26.89$, $p < .001$, $d = 1.78$. This effect only reached marginal significance within the fraud, $F(1, 37) = 3.86$, $p < .06$, $d = 0.65$, and burglary, $F(1, 39) = 3.31$, $p < .08$, $d = 0.58$, conditions. In all three crime conditions, the high-masculine suspect was perceived to be more likely than the moderately masculine suspect to offend again, all *F*s > 11.55, *p*s < .003, $d > 1.09$. Thus, high-masculine suspects were

Table 4. Likely to offend again Study 1.

| | Fraud | | Burglary | | Assault | |
|---|---|---|---|---|---|---|
| Masculinity | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Low | 5.68 | 2.39 | 5.28 | 2.34 | 5.00 | 2.17 |
| Moderate | 5.08 | 2.16 | 5.05 | 2.26 | 5.60 | 2.20 |
| High | 6.24 | 2.11 | 5.85 | 2.11 | 6.74 | 1.93 |

perceived to be more likely to commit another crime, particularly another violent crime.

### *Discussion*

The selection of a guilty suspect was consistent with the predictions of the aggression hypothesis. High masculine suspects were more likely to be perceived as guilty in the assault case, compared to the low and moderately masculine suspects. There were no effects of suspected masculinity in the other criminal cases, inconsistent with the general criminality and the male-stereotype hypotheses. The aggression hypothesis was also partially supported by judgments of the likelihood of reoffending. The high-masculine suspect was seen as more likely to reoffend, particularly in the assault case.

We conducted a second study to replicate these results and address several possible limitations to Study 1. Although the high- and low-masculinity suspects did not differ in pilot ratings of attractiveness, in Study 1 the high-masculine suspect was rated as low in intelligence and honesty and quite high in aggressiveness. To ensure this was not the source of our effects, we selected photos for Study 2 that had not differed in ratings of intelligence or honesty. We then selected a morph that did not contain either of these photos.

## Study 2

Study 2 was designed to replicate the findings of Study 1 with a different set of photos to rule out the possible differences in perceived intelligence and honesty. We also included additional manipulation checks. Pilot ratings for the photos are presented in Table 5.

Table 5. Pilot ratings of suspects used in Study 2.

| | Low | | Moderate | | High | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Masculinity | 4.92 | 2.12 | 7.28 | 1.46 | 8.02 | 1.68 |
| Attractiveness | 3.59 | 1.71 | 5.80 | 1.66 | 4.51 | 2.20 |
| Intelligence | 5.54 | 1.89 | 5.44 | 1.87 | 5.23 | 1.93 |
| Honesty | 4.64 | 1.81 | 4.88 | 2.07 | 4.97 | 1.31 |
| Aggressiveness | 3.59 | 2.04 | 4.68 | 2.19 | 4.95 | 2.08 |

### *Participants*

For Study 2, 120 participants were recruited through MTurk and were paid $0.30. Seven male participants were removed from the analysis for answering one of the two manipulation check items incorrectly (remaining $N = 113$; 29 female, $M_{age} = 30.28$).

### *Method*

Participants first viewed photographs of each of the three individuals on separate pages and rated them on masculinity, attractiveness, intelligence, trustworthiness, aggression, competence, and whether they were risk-takers. Ratings were made on a ten-point scale (1 = *not at all* to 10 = *very*).

After rating each photo, participants followed the same procedure as in Study 1. They selected which of the three suspects (feminine, neutral, or masculine) they believed most likely committed the crime provided to them (burglary, assault, or check fraud). Presentation of the photos was counterbalanced across participants in both parts of the study. Again, participants were asked manipulation check questions, and each photograph was then individually presented to them.

### *Results*

There were no effects of participant gender, all $ps > .11$. As sex did not interact with suspect masculinity, we do not discuss this variable further.

#### *Likelihood of Having Committed the Crime*

Choice of the suspect thought to be most likely to have committed the crime was submitted to a chi-square test of association, see

Table 6. Choice Study 2.

| Masculinity | Fraud | Burglary | Assault | Total |
|---|---|---|---|---|
| Low | 16 | 16 | 4 | 36 |
| Moderate | 10 | 8 | 11 | 29 |
| High | 13 | 14 | 21 | 48 |
| Total | 39 | 38 | 36 | 113 |

Table 6. The overall effect of crime on suspect selection was significant, $\chi^2(4) = 10.98$, $p = .027$, $w = .30$. Within the assault condition, the high-masculine suspect was most likely to be selected, $\chi^2(2) = 12.17$, $p = .002$, $w = .32$. There was no reliable difference in suspect selection within the burglary condition, $\chi^2(2) = 2.74$, $p = .25$, $w = .15$, or the fraud condition, $\chi^2(2) = 1.39$, $p = .50$, $w = .11$.

*Likelihood of Re-offending*

A 3 (Crime) × 3 (Masculinity) mixed-measures ANOVA conducted on perceived likelihood of re-offending revealed no effects of crime, $F$s < 1.35, $p$s > .25. The main effect of suspect masculinity was significant, $F(2, 220) = 12.36$, $p < .001$, $d = 0.67$. The high-masculine suspect ($M = 5.73$, $SD = 2.33$) was perceived to be more likely to re-offend than the low-masculine suspect ($M = 4.77$, $SD = 2.47$), $F(1, 110) = 18.58$, $p < .001$, $d = 0.82$, or the moderately masculine suspect ($M = 5.19$, $SD = 2.16$), $F(1, 110) = 10.73$, $p = .001$, $d = 0.62$.

***Discussion***

As in Study 1, the high-masculine suspects were more likely to be perceived as guilty in the assault case, compared to the low and moderately masculine suspects. There were no differences in the other criminal cases. These findings are again consistent with the aggression hypothesis. In contrast, the likelihood of reoffending was more supportive of the general criminality hypothesis. High masculine men were perceived to be more likely to reoffend regardless of the crime.

Across the two studies, participants used masculinity as a cue for deciding who had committed a violent crime, but not other crimes. Study 3 was conducted to determine what traits may co-vary with masculinity and whether they would predict the likelihood of committing a particular crime.

## Study 3

The focus of Study 3 was to determine which traits related to the masculinity of the suspect predicted being chosen for the violent crime (e.g., aggressiveness, dangerousness, etc.). We examined suspect selection across two different crimes (assault and burglary) and used only the low- and high-masculine males in selection decisions. The low- and high-masculine males were rated on several different traits; however, these judgments were relative. Participants were asked to determine whether the low- or high-masculine suspect was more masculine, risky, intelligent, etc. This procedure allowed us to determine which traits were associated with masculinity and whether these traits were important in the selection of a suspect. For example, if masculinity is indicative of a propensity to be violent, we should expect: (1) the high-masculine suspect to be rated as more aggressive than the low-masculine suspect, and (2) these ratings to predict selection of the high-masculine male for the violent crime. Thus, we should expect a Crime × Trait interaction to predict suspect choice, indicating which trait predicts the selection of the more masculine suspect for the violent crime but not the nonviolent crime.

***Participants***

Participants consisted of 119 people (52.1% female, 47.9% male; $M_{age} = 34.32$, $SD = 12.16$) recruited through MTurk. Responses from one additional participant were not recorded by the online survey. All participants had to be located in the United States, have at

least a 95% approval rating, and be at least 18 years of age in order to participate. Participants were compensated $0.30.

### Method

Measures included a brief demographic form, picture rating, and a suspect rating task. The pictures used were morphs of three feminine men (Person A) and three masculine men (Person B), created using FantaMorph.

Participants completed a demographic questionnaire and a picture-rating task. In this task, participants were asked to view two pictures and make relative judgments. On the left side of the screen was Person A (feminine morph) and on the right was Person B (masculine morph). Participants were asked (one item per page) who was more masculine, risky, intelligent, aggressive, impulsive, attractive, trustworthy, competent, and dangerous. The seven-point scale ranged from 'A is much more ___' (–3) to 'B is much more ___' (+3), with 'equally ___' (0) being in the middle. Thus, negative scores reflected greater trait endorsement of Person A, and more positive scores reflected greater trait endorsement of Person B.

Participants were then randomly assigned to one of two criminal cases (either burglary or assault) in the suspect rating task. Participants were then presented with the same photographs that had been rated in the previous picture rating task and asked which one of the suspects was most likely to have committed the crime. This six-point scale ranged from, 'Person A is much more likely' (–3) to 'Person B is much more likely' (+3). Finally, participants answered several attention-check questions and were debriefed.

### Results

#### Suspect Traits

One-sample *t*-tests were conducted to determine whether individuals ascribed different traits to the high- and low-masculine suspects. Results are presented in Table 7. Confirming the manipulation, the high-masculinity suspect was perceived to be more masculine than was the low-masculinity suspect. Additionally, the high-masculine suspect was seen as significantly more risky, impulsive, aggressive, dangerous, and attractive than was the low-masculine suspect. The low-masculine suspect was perceived to be more intelligent, trustworthy, and marginally more competent than was the high-masculine suspect.

Table 7. Trait ratings of masculine and feminine suspects.

| Trait | *M* | *SD* | *t* | *p* | *D* |
|---|---|---|---|---|---|
| Masculine | 2.38 | 0.76 | 33.10 | <.001 | 6.28 |
| Risky | 1.10 | 1.35 | 8.62 | <.001 | 1.64 |
| Intelligent | –0.88 | 1.33 | 7.05 | <.001 | 1.34 |
| Aggressive | 1.67 | 1.05 | 16.80 | <.001 | 3.19 |
| Impulsive | 0.66 | 1.43 | 4.89 | <.001 | 0.93 |
| Attractive | 0.89 | 1.64 | 5.76 | <.001 | 1.09 |
| Trustworthy | –0.54 | 1.35 | 4.28 | <.001 | 0.81 |
| Competent | –0.24 | 1.30 | 1.97 | .052 | 0.37 |
| Dangerous | 1.10 | 1.19 | 9.81 | <.001 | 1.86 |

Note: Positive scores indicate that the trait was ascribed more to the high-masculine suspect, whereas negative scores indicate that the trait was ascribed more to the low-masculine suspect.

#### Likelihood of Committing the Crime

The likelihood rating was submitted to an independent group *t*-test (see Table 8). This analysis revealed a significant effect of crime, $t(110) = 3.04$, $p = .003$, $d = 0.58$. Replicating previous studies, the high-masculine suspect was judged to be more likely to commit the assault than the burglary. One-sample *t*-

Table 8. Suspect selection.

| | *M* | *SD* | *N* |
|---|---|---|---|
| Assault | 1.49 | 1.26 | 55 |
| Burglary | 0.70 | 1.48 | 57 |

Note: Positive scores indicate that the high-masculine suspect was viewed as more likely to commit the crime; negative scores indicate that the low-masculine suspect was viewed as more likely to commit the crime.

tests within each crime condition revealed that the high-masculine suspect was viewed as more likely than the low-masculine suspect to commit either type of crime. However, this effect was significantly stronger for the assault, $t(54) = 8.78$, $p < .001$, $d = 2.39$, than for the burglary, $t(56) = 3.59$, $p = .001$, $d = 0.96$.

We next examined whether suspect traits predicted the likelihood of committing either or both crimes. We therefore conducted a regression analysis predicting likelihood of committing the crime. Crime type (dummy coded such that 1 = assault and 0 = burglary), all suspect traits except for competence and masculinity[4] (standardized), and all two-way interactions of crime type with these traits were entered into the model. In this model, crime-type continued to significantly predict which suspect was seen as likely to have committed the crime, $\beta = .231$, $t = 3.07$, $p = .003$, $f^2 = .12$. Even controlling for suspect traits, the masculine suspect was more likely to be suspected of committing the assault than the burglary. There were also significant effects of dangerousness, $\beta = .786$, $t = 4.17$, $p < .001$, $f^2 = .23$, and aggressiveness, $\beta = -.426$, $t = 2.68$, $p = .009$, $f^2 = .09$. These effects were qualified by significant interactions of Aggressiveness × Crime type, $\beta = .457$, $t = 3.05$, $p = .003$, $f^2 = .12$, and Dangerousness × Crime type, $\beta = -.498$, $t = 3.28$, $p = .001$, $f^2 = .11$. Simple-slope analyses were conducted within each crime-type condition to probe these interactions.

The Aggressiveness × Crime type interaction is presented in Figure 1. Within the assault condition, the high-masculine suspect was considered more likely to commit the crime when he was perceived to be more aggressive than the low-masculine suspect (simple-slope = 0.546), $t = 3.46$, $p = .001$, 95% CI [.233, .860]. Within the burglary condition, this effect was not significant (simple-slope = 0.350), $t = 1.77$, $p = .079$, 95% CI [–.042, .741]. Thus, the perceived aggressiveness of the high-masculine suspect was an important reason why this individual was seen as more likely to commit the violent crime, which supports the aggression hypothesis.

The Dangerousness × Crime type interaction is presented in Figure 2. Within the burglary condition, the high-masculine suspect was considered more likely to commit the crime when he was perceived to be more

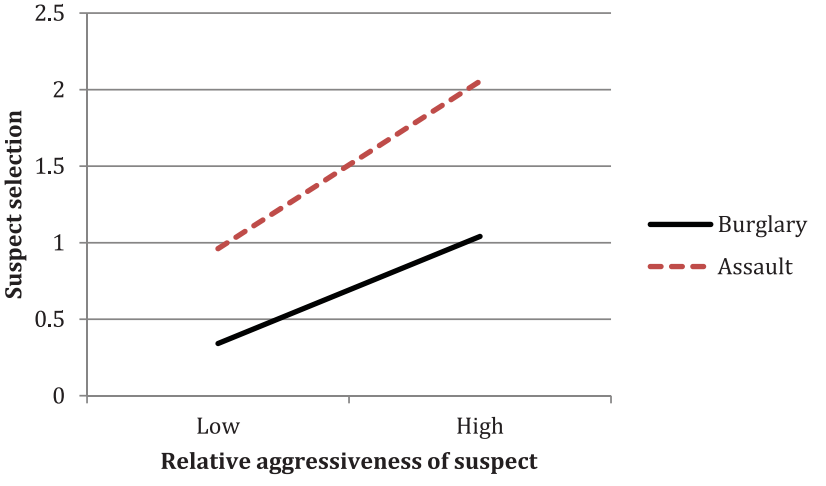


Figure 1. Higher selection scores indicate belief that the high-masculine suspect was more likely to have committed the crime. High relative aggressiveness scores indicate perception that the high-masculine suspect was more aggressive than the low-masculine suspect.

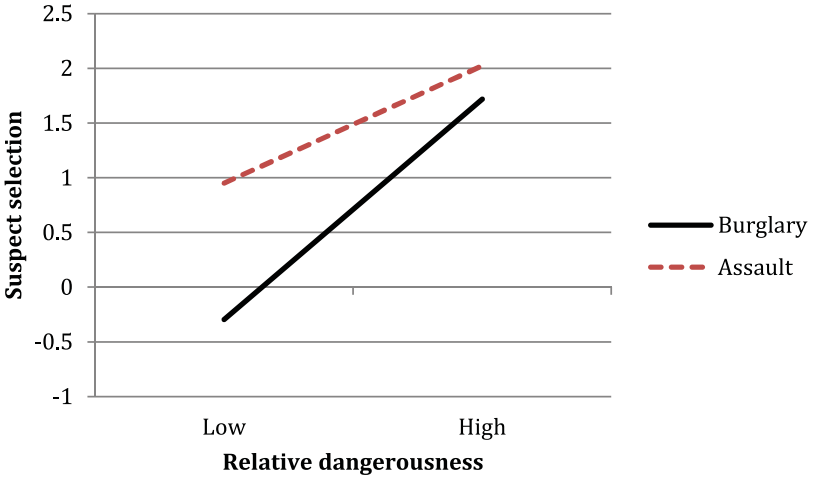


Figure 2. Higher selection scores indicate belief that the high-masculine suspect was more likely to have committed the crime. High relative dangerous scores indicate perception that the high-masculine suspect was more aggressive than the low-masculine suspect.

dangerous than the low-masculine suspect (simple-slope = 1.008), $t = 5.72$, $p < .001$, 95% CI [.659, 1.357]. Within the assault condition, this effect was attenuated (simple-slope = 0.535), $t = 3.83$, $p < .001$, 95% CI [.257, .813]. Thus, the perceived dangerousness of the high-masculine suspect was an important reason why this individual was seen as more likely to commit the nonviolent crime.

### *Discussion*

As in Studies 1 and 2, the masculine suspect was seen as more likely to commit assault than burglary. The masculine suspect was viewed as being more risky, impulsive, aggressive, dangerous, and attractive, compared to the low-masculine suspect. However, it seems only the aggressive and dangerous traits of the masculine suspect were important in crime selection decisions. Selection of a suspect for the assault was strongly influenced by which suspect appeared more aggressive. This explains in part why the high-masculine male is viewed as more likely to commit assault, and is consistent with the aggression hypothesis. In contrast, selection of a suspect for the burglary was influenced by which suspect appeared more dangerous. As this trait is not as highly correlated with masculinity, the tendency to select the high-masculine suspect is attenuated for this type of crime.

## General Discussion

The current study sought to clarify the role of masculinity in criminality assessments. Whereas previous research (Ward et al., 2012) has found support for masculinity acting as a cue to stereotypic male crime (e.g., burglary), there is also reason to believe that masculinity could be a cue for violent crime (e.g., assault) or for crime in general. We varied the masculinity of male suspects. We then manipulated whether the crimes were stereotypic of men, and whether the crimes involved violence. The violent nature of the crime was not examined in the original Ward et al. (2012) paper. Our results supported the aggression hypothesis that masculinity acts as a cue to committing violent crimes, in contrast to Ward and colleagues' findings that (1) sex of the suspect (i.e., male versus female) was related to committing a stereotypic male

crime (i.e., burglary) and (2) masculinity of the suspect, regardless of sex, was related to committing any type of crime. When deciding which individual committed a particular crime, participants were more likely to choose the high-masculine suspect in the assault case (Studies 1, 2, and 3). They also believed the high-masculine suspect was more likely to reoffend in the assault case, compared to the moderate- and low-masculine suspects (Study 1). Recall that Ward et al. (2012) found that suspects received higher guilt ratings if they were perceived as being high in masculinity, regardless of the sex of the suspect or the type of crime (i.e., burglary, child abuse, or fraud). The current study clarifies the relationship and extends the findings of Ward and colleagues (2012) by varying both the stereotypicality of the crime and whether the crime involved violence. In doing so, we found evidence that masculinity indicates a propensity to commit violent crime, contrary to Ward et al. (2012).

However, we did not test why masculinity is a cue to violence. One possibility, mentioned previously, is that we may have evolved this ability to detect cues indicating probable victimization (Duntley & Shackelford, 2008). Additionally, there was also evidence among secondary measures for the general criminality hypothesis, as the high-masculine suspect was rated as more likely to reoffend across crimes (Study 2). This finding is more consistent with the Ward et al. (2012) findings, where more masculine suspects were rated as more guilty across all crimes.

When examining suspect traits, the results supported the hypothesis that masculinity acts as a cue to aggressive tendencies, which then predicts committing a violent crime (Study 3). Perceived aggressiveness of a masculine suspect appears to have been particularly important in selecting the masculine suspect for a violent offence. Further, dangerousness of the masculine suspect predicts whether they will be selected for a burglary offense. From these results, masculinity appears to act as a cue to observers concerning the potential violent behavior of the individual. The addition of these analyses shed further light on the role of masculinity and perceptions of criminality.

Another possibility is that masculinity provides information concerning violence against others as part of an adaptive system *purposefully* directed towards others. Social interactions involve making some type of inference or impression regarding others, and physical features can be one source of information to help draw these inferences (Gangestad & Thornhill, 2007). Cues can act in a direct manner to convey information to the receiver, whereas the receiver of these cues has special adaptations to process the information, known as a signaling system (Gangestad & Thornhill, 2007). For example, in a competitive situation, masculine cues may signal physical formidability to competitors, allowing the receiver of such information to determine whether they would be able to defeat this competitor (Gangestad & Thornhill, 2007). In a crime scenario, masculinity may act as a cue to others that the person is aggressive and potentially physically dangerous. The victim adaptation explanation and the signaling system explanation are worth consideration in future research.

### *Limitations and Implications*

Limitations of the present studies include characteristics of the pictures and length of the crime scenario. First, we used standardized photographs to control for confounding factors (e.g., clothing differences). Future research could therefore include a broader range of photos, including actual criminal mugshots, while controlling for any individual differences or confounds among them (e.g., background of photograph, perceived attractiveness, etc.). The photographs used were of young, college-aged males. Although the age of those in the photos used coincide with the peak age of criminals (Andresen,

Frank, & Felson, 2014), varying the age of suspects may be beneficial to further investigate masculinity and cues to crime. Age of the suspect and masculinity may interact, such that masculinity may have different effects on judgments depending on the suspect's age. For instance, as criminality typically decreases with age (Andresen et al., 2014), masculinity may or may not be as indicative to the likelihood of committing a violent crime in older adults. Future studies would also benefit from adding female photos varying in masculinity to determine whether masculine features act similarly among female suspects as cues to aggression and violence. Ward and colleagues (2012) did examine female suspects who varied in masculinity. However, as they did not include a violent crime in their method, future research should extend the present study and examine whether masculinity among female suspects would also act similarly as being a cue to aggressive and violent behavior.

Second, the crime scenarios used in the current study do not reflect the amount of information provided to jurors or other legal investigators. Indeed, the methodology used (where participants see multiple suspects and have limited information of the crime) is more akin to the investigation stage of a crime. Although our scenarios may be more relevant to those investigating a crime with the motivation to catch the perpetrator, future research should determine whether masculinity affects jurors' decisions in scenarios with more detailed information.

### *Conclusions*

The current study further clarifies the role of masculinity in legal judgments. Previous research provided some support for masculinity as a cue to male-stereotypic crime (Ward et al., 2012). However, by adding a violent crime to compare against burglary (a stereotypic male crime), our results suggest that masculinity acts as a cue to the likelihood of committing a violent crime. During initial inquiry into a criminal act, investigators may examine multiple suspects or witnesses may pick individuals from a simultaneous lineup. As we investigated selection of suspects from a lineup in the current study, these findings may be particularly applicable to investigator and witness selection of a suspect. More generally, masculine features in a criminal setting are more likely to indicate violent behavior and could potentially affect legal decision-makers when examining suspects.

### Disclosure statement

No potential conflict of interest was reported by the authors.

### Notes

1. At least for some crimes, these stereotypes contain a kernel of truth; men are more likely to commit burglary, robbery, and assault, whereas women are more likely to be involved in prostitution (FBI, 2013).
2. A pilot study was conducted prior to the subsequent studies. Participants ($N = 116$) viewed three crime scenarios varying in masculinity from previous pilot testing (fraud, assault, and burglary), which were counterbalanced. Each crime scenario was paired with one photograph of the suspect, such that participants viewed a total of three suspect photos varying in masculinity (feminine, neutral, and masculine), and participants were asked rate the likelihood that the suspect was guilty of the crime. Results showed that the low-masculine suspect was less likely to be seen as guilty in the assault case, compared to the moderate- and high-masculine suspects. There were no effects of masculinity for the other crimes. However, we were unable to examine the Crime $\times$ Masculinity interaction due to the design of the study. Thus, a different method was conducted for the main studies reported in the remainder of this paper.
3. In Studies 1 and 2, participants were also asked to imagine that each suspect was found guilty and provide a punishment for each suspect. They provided a prison sentence (ranging from one to ten years) and a fine of up to $10,000. Across both studies, high-masculine men received longer prison sentences, supporting the general criminality hypothesis, whereas we found no effects for fine. The inconsistency in

sentencing versus guilt is likely due the nature of these measures. For instance, decisions related to the selection of guilty suspects and estimating likelihood of reoffending are focused on accuracy. However, determining an appropriate sentence (e.g., prison and fine) might involve one's views on the purpose of the criminal justice system. Punishments may serve to deter the offender, ensure they receive their "just deserts", or act as some form of rehabilitation for the offender (Van Prooijen, 2010). As a result, cues of masculinity may be less informative for punishments and perhaps act as a general cue to punish the offender more harshly in any context. As these measures were not a central focus to our study, we dropped the sentence recommendations (prison and fine) from Study 3.

4. As the two suspects did not differ in competence, this was excluded from analyses. Additionally, perceived masculinity acted as a manipulation check for our suspect photographs; therefore, it was also excluded from analyses, as it would be redundant with the masculinity manipulation.

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## Appendix

### *Crime Vignettes*

#### *Burglary*

On June 14, 2013, Mr. Brown heard noises coming from his neighbor's house. Mr. Brown's suspicion was aroused because he knew his neighbor was on vacation. He then notified the police of the suspicious activity. Officer Smith arrived at the scene several minutes later and observed the suspect exiting the victim's house through a broken window with several items (later discovered to total over $1000) in the suspect's possession. Officer Smith proceeded to arrest the suspect on suspicion of felony burglary. The suspect was arrested without incident.

#### *Assault*

On February 21, 2013, police were called to the scene of a McDonalds. Surveillance footage showed (and eyewitnesses confirmed) an altercation between two patrons. Suspect stepped in front of the victim while in line. The victim politely asked the suspect to return to their place in line.

Suspect then proceeded to strike the victim multiple times. The police were notified and the victim was treated at the hospital for lacerations to the head and a concussion. The suspect was subsequently arrested and charged with felony aggravated assault.

### *Check Fraud*

On April 7, 2013, police were notified by the manager of Macy's for a suspected fraudulent check. The manager told police several days prior that a person wrote a check for various merchandise, including several designer jackets and a watch, totaling over $1000. However, it was discovered that not only were there insufficient funds, the account was closed over a year ago. Police matched suspect's DMV photograph with the security camera footage. Based on this evidence, police arrested the suspect who was charged with felony check fraud.