A Dangerous World Implicit Theory: Examining Overlap with Other Criminogenic

Constructs

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Abstract

Ward and Keenan (1999) hypothesised that some individuals who sexually offend against children have belief systems through which they perceive the world as an inherently dangerous place—labelled a dangerous world implicit theory (DWIT). Individuals with a DWIT are hypothesised to either (1) believe it is necessary to punish women and/or children who are perceived as threatening, or (2) see children as more accepting than adults, and as capable of understanding and gratifying the individual's needs and desires. In two online studies ($N = 113$ and $N = 123$) we examined the possible overlap between the DWIT and four other constructs: hostile attribution bias, hostile sexism, emotional congruence with children, and a 'children as sexual beings' implicit theory. Results suggest that identifying with an individual holding DWIT overlaps considerably with some of the other constructs, but not with hostile attribution bias—a finding that ran counter to our hypotheses.

Keywords*: Dangerous world implicit theory, children as sexual beings, hostile attribution bias, hostile sexism, emotional congruence with children, sexual offending against children*

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Kruglanski (2001), writing about the discipline of social psychology, lamented both

the tendency to *rediscover the wheel*, referring to the "failure to notice commonalities across

time" (p. 873) and *fragmentation*, referring to the "failure to notice commonalities across

domains" (p. 873). These, argued Kruglanski, were negative consequences of an overly

focused approach to theory within social psychology, at the expense of high-level theorising.

Recently, Ó Ciardha (2017) similarly drew attention to potential confusion that researchers

and practitioners may face within the literature on offender social cognition. In attempting to

understand the causes of a particular offending behaviour, there is a risk that researchers are

developing research strands and terminology around psychological constructs that ignore

cognate phenomena in other literatures (jangle fallacy; Kelley, 1927). In other words,

researchers working on predictors of sexual offending, for example, may miss the same

constructs—differently labelled—in the aggression or general social cognition literatures.

Looking at psychological phenomena through different lenses and at different levels

of explanation can form part of an *integrative pluralistic* approach (see Ward, 2014).

However, we argue that for disciplines and sub disciplines to integrate effectively, there first

needs to be an understanding of the overlap between psychological phenomena of interest. In

the current studies, we examine how the hypothetical construct of a dangerous world implicit

theory (Ward & Keenan, 1999) may overlap with other psychological and potentially

criminogenic constructs.

The *implicit theories* theory (Ward, 2000) is one of the most influential single-factor

theories attempting to explain cognitive factors in the aetiology of sexual offending against

children. The theory posits that distorted beliefs such as seeing the world as a dangerous

place and seeing children as safe and reliable may play a causal or maintaining role in sexual

offending (Ward, 2000; Ward & Keenan, 1999). The theory suggests that holding these beliefs affects the social information processing of individuals, increasing their risk of behaving in an offending manner. The theory has somewhat dominated research and practice relating to social cognition and sexual offending (see Beech & Ward, 2004; Drake, Ward, Nathan, & Lee, 2001; Gannon & Polaschek, 2006; Ward & Siegert, 2002). However, there has been insufficient examination of the possible relationship between implicit theories and similar psychological constructs implicated by parallel literatures investigating other antisocial behaviours such as violent offences and sexual offences against women. For example, individuals who commit violent offences are more likely to interpret social situations in a hostile way which can lead to their offending (Lim, Day, & Casey, 2011) while individuals who commit or are likely to commit sexual offences against women are often found to have hostile attitudes towards women (e.g., Abbey & McAuslan, 2004; Abrams, Viki, Masser, & Bohner, 2003; Masser, Viki & Power, 2006; Stander, Thomsen, Merrill, & Milner, 2017). Both of these constructs appear to share definitional similarities with Ward and Keenan's (1999) *dangerous world* implicit theory.

The term *cognitive distortions* was first used within the context of sexual offending against children by Abel, Becker and Cunningham-Rathner (1984). Cognitive distortions in sexual offending refer to beliefs or attitudes that contradict accepted social norms which are related to the onset and persistence of offending (Ó Ciardha & Ward, 2013). Although the concept of cognitive distortions in the sexual offending literature is argued to be problematically broad and to offer an incomplete explanation of offender cognition (Gannon & Polaschek, 2006; Ó Ciardha & Ward, 2013), these limitations do not remove the necessity to understand the role of distorted thinking and maladaptive beliefs in offending behaviour (Ward, Hudson, Johnston, & Marshall, 1997).

Across two articles, Ward and Keenan (1999) and Ward (2000) presented the implicit theories theory of cognitive distortions. These implicit theories are seen as causal theories underpinning the apparent distortions expressed by individuals who commit sexual offences against children (Ward & Keenan, 1999). Ward and Keenan also state that non-offending individuals can hold some of these implicit theories, yet lack other factors that might cause offending, such as insecure attachment or deviant sexual interest.

Ward (2000) explained implicit theories as types of schema. The term *schema* is the most used term by social psychologists referring to mental constructs such as, concepts, knowledge structures, behavioural scripts, beliefs, or theories (Kunda, 1999; see Ward, 2000). Ward suggested that implicit theories "function like scientific theories and are used to explain empirical regularities (e.g., other people's actions) and to make predictions about the world" (2000, p. 492). In other words, schemas aid the process of encoding, storage, and retrieval of our understanding of the world and eventually, guide our behaviour. Ward (2000) suggests that the implicit theories held by individuals who commit sexual offences against children involve these individuals' perception, belief, and interpretation of the actions and desires of the victims (Ward, 2000; Ward & Keenan, 1999).

The five key implicit theories introduced by Ward and Keenan (1999) were *children as sexual beings, dangerous world, entitlement, uncontrollability,* and *nature of harm.* There have been a number of studies empirically testing these implicit theories among individuals who sexually offend against children as well as community samples (e.g., Gannon, 2006; Gannon, Wright, Beech, & Williams, 2006; Keown, Gannon, & Ward, 2008, 2010; Marziano, Ward, Beech, & Pattison, 2006; Mihailides, Devilly, & Ward, 2004). Furthermore, other researchers have applied a Wardian implicit theory framework to the conceptualisation of social cognition in individuals who have committed a variety of offences, including rape, violent offences, domestic violence, and firesetting (see Ó Ciardha & Ward, 2013). In this

paper, we focus in particular on the conceptualisation of the dangerous world implicit theory as it is one of the most consistently hypothesised implicit theories among different offender groups (see Beech, Fisher, & Ward, 2005; Beech, Parrett, Ward, & Fisher, 2009; Dempsey & Day, 2011; Gannon, Hoare, Rose, & Parrett, 2012; Ó Ciardha & Gannon, 2012; Polaschek & Ward, 2002; Ward & Keenan, 1999).

The dangerous world implicit theory refers to the belief that the world is a dangerous place in which other people tend to behave in an abusive and rejecting way (Ward & Keenan, 1999). Two versions of this theory were originally proposed by Ward and Keenan (1999) in relation to child molestation. The first involves the belief that it is a necessity to defend oneself by punishing people who seem to have intent to harm you for their own interest. Offenders with this belief think that it is acceptable to sexually abuse women or children in order to maintain dominance, if their authority is threatened. Examples of beliefs related to this theory include *"She had no right to question my authority"* and *"It was my way of punishing and controlling her"* (Ward & Keenan, 1999, p.829).

We argue that believing the world is a dangerous place and that people are likely to behave in a rejecting manner is similar to *hostile attribution bias*, which is a biased interpretation of others' actions in ambiguous social situations in a hostile way (Yeager, Miu, Powers, & Dweck, 2013). According to Crick and Dodge's (1994) social information-processing model, there are several steps through which people perceive and interpret situations in their social world. This interpretation strongly determines individuals' reactions to the situations. During the first two steps, individuals focus on particular cues within their perceived situation, where encoding and interpretation takes place. In either stage of information processing, some individuals interpret their social situations in a biased way (Wilkowski & Robinson, 2008). There is robust empirical support for hostile attribution bias, which shows that aggressive individuals are more likely to attribute hostile intent to

behaviours in their social environment. This is due to their biased perceptions, even if the actual intent is benign or the situation is ambiguous (de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002; Dodge, 1980; Yeager et al., 2013). Empirical studies show similar results in child populations (de Castro et al. 2002; Dodge, 1980), and in adult male offenders (Lim et al., 2011; Schönenberg & Jusyte, 2014).

We also argue that the first version of dangerous world implicit theory may overlap with the construct of *hostile sexism.* Hostile sexism is defined as antagonistic and negative attitudes towards women (Glick & Fiske, 1996). Individuals with hostile sexist attitudes fear and have anger towards women as they believe women use their sexuality to take advantage of male power (Yamawaki, 2007). Individuals who are sexually aggressive and hold hostile sexist beliefs think that women are dishonest and unreliable when expressing sexual interest because they would like to manipulate men. Therefore, individuals with highly sexist attitudes believe women are not worthy of trust and respect (Malamuth & Brown, 1994).

Hostile sexism is a factor associated with individuals who perpetrate sexual offences against women (Abbey & McAuslan, 2004; Abrams et al., 2003; Masser et al., 2006; Stander et al., 2017). Research indicates that individuals with hostile sexist attitudes minimise the severity of both stranger and date-rapes (Yamawaki, 2007). Moreover, research shows that hostile sexism is positively associated with rape proclivity (Masser et al., 2006). We argue that believing that women have malevolent intentions and are threatening offenders' authority as conceptualised in the dangerous world implicit theory is essentially similar to hostile sexism where women are seen as dishonest, manipulative, and unreliable.

In addition to the similarities between the first version of the dangerous world implicit theory and the two psychological constructs, hostile attribution bias and hostile sexism, we also examined the second version of the dangerous world implicit theory. Added to the perception of the world as threatening, the second version of the dangerous world implicit

theory by Ward and Keenan (1999) focuses on the belief that adults are untrustworthy, rejecting, and behave in a manner that takes advantage of men who are believed to be innocent. Unlike the first version, children are seen as more accepting and dependable than adults. It is also believed that children are capable of love and affection. Examples of beliefs related to this theory include *"Children give adults more acceptance and love than other adults"* and *"You can't trust adults"* (Ward & Keenan, 1999, p.830).

Emotional congruence with children has been defined as the overemphasised cognitive and emotional association with children (Finkelhor, 1984; Mann, Hanson, & Thornton, 2010; McPhail, Hermann, & Fernandez, 2014; McPhail, Hermann, & Nunes, 2013; Wilson, 1999). Research shows that having emotional congruence with children is a risk factor for child sexual abuse (Hanson & Morton-Bourgon, 2005; Mann et al., 2010). Individuals who are emotionally congruent with children feel that relationships with children are more fulfilling than relationships with adults (Finkelhor & Araji, 1986). We argue that feeling related to children on an emotional and cognitive level is similar to believing that children are more dependable than adults and can provide love as conceptualised in the second version of the dangerous world implicit theory.

In addition to the perception of adults as untrustworthy while children are dependable, the second version of the dangerous world implicit theory also involves the perception that children are capable of understanding the offender's needs and sexual desires and are willing to gratify them. Other examples of beliefs related to the second version of the dangerous world implicit theory include *"Kids really know how to love you"* and *"Sex between children and adults is very loving"* (Ward & Keenan, 1999, p.830). We argue that another of the five key implicit theories by Ward and Keenan (1999), the *children as sexual beings* implicit theory, is similarly based on the perception of children as sexual agents.

According to the implicit theories theory, an individual holding a children as sexual beings implicit theory, may interpret everyday behaviour, such as a child sitting on an adult's lap as revealing sexual intent (Ward, 2000). Those holding this implicit theory may see children as having sexual needs and desires, resulting in sexualised behaviour, inconsistent with the child's actual sexual development. Children are also thought to be capable of making informed decisions about their sexual preferences, as well as when, how, and with whom they have sexual experiences (Ward & Keenan, 1999). Examples of beliefs related to this theory include *"The child wanted sex"* and *"We love each other, so this is okay"* (Ward & Keenan, 1999, p. 828).

Even though it has been suggested that the five key implicit theories are "coherent and consist of a number of interlocking beliefs" (Ward, 2000, p.504), research seeking evidence for different implicit theories (e.g., Marziano et al. 2006; Paquette, Cortoni, Proulx, & Longpre, 2014) risks implying that these constructs are independent and distinct from each other. In this paper, we argue that the conceptualisations of these two implicit theories (i.e., dangerous world and children as sexual beings) contain relatively similar beliefs. In other words, we argue that there are considerable similarities between believing that children can understand adults' sexual desires and are willing to satisfy them—as conceptualised in the second version of the dangerous world implicit theory—and thinking that children are capable of making informed decisions about sexuality—as conceptualised in the children as sexual beings implicit theory.

As suggested by Ó Ciardha (2017) and as we have identified above, Ward and Keenan's (1999) conceptualisation of dangerous world implicit theory may involve a combination of several other constructs such as, hostile attribution bias, emotional congruence with children, and others. The aim of this paper is to examine if the constructs (a) hostile attribution bias, (b) hostile sexism, (c) emotional congruence with children, and (d)

children as sexual beings significantly overlap with Ward and Keenan's (1999) conceptualisation of the dangerous world implicit theory.

Study 1

The goal of the first study was to examine the associations between the dangerous world implicit theory and four other constructs: (a) hostile attribution bias, (b) hostile sexism, (c) emotional congruence with children, and (d) children as sexual beings, adopting a within-subjects design. We hypothesised that the first version of dangerous world implicit theory would be associated with the concept of a (a) hostile attribution bias and (b) hostile sexism. The second version of the dangerous world implicit theory was hypothesised to be associated not only with (a) hostile attribution bias and (b) hostile sexism, but also with (c) emotional congruence with children and (d) children as sexual beings.

Method

Measures

Dangerous world vignettes. We created four vignettes; dangerous world 1 part A and part B, Dangerous World 2 part A and part B, based on the dangerous world implicit theory (Ward & Keenan, 1999). These vignettes were developed to map closely onto the explicit description of the dangerous world implicit theory in Ward and Keenan's paper, thus ensuring face validity. Each vignette consists of a protagonist and his beliefs relevant to the two versions of the dangerous world implicit theory. Dangerous world 1, part A describes the belief that it is necessary to fight back in order to dominate or punish other people and is as below:

> Tom thinks the world is a dangerous place. He believes that other people always put
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> their own interests first. They're normally willing to be abusive or to reject him to
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> promote their own interests. Tom believes that it is often necessary to fight back in

order to show other people who's boss. This might involve punishing individuals who

do him harm and to make sure he always comes out on top. Tom is ready to strike

back when necessary and he regularly asserts his dominance over others.

Dangerous world 1, part B consists of the perception of women as threats to the authority of

men and in need for retribution, and is as follows:

Tom has some specific views about women and children. If women or children

threaten Tom or need to be disciplined, he has no problem giving them what is

coming to them. Tom sometimes feels he has to teach the women in his life a lesson

to put them in their place, especially if they question his authority or the authority of

other men.

Dangerous world 2, part A involves perceiving adults as unreliable while children are

viewed as reliable. In dangerous world 2, part B, children are depicted as loving and capable

of understanding and fulfilling adult sexual desires (see Appendix).

For each vignette, participants were asked two questions. The first measures how

strongly individuals could identify with the protagonist, (e.g., "Can you identify with Tom?")

and was rated on a 5-point Likert-type scale from 1 (*No, I don't think like Tom at all*) to 5

(*Yes, I see the world as Tom does*). The second asks how often they find themselves thinking

like the protagonist in the vignettes (e.g., "Do you ever find yourself thinking like Tom?").

This item was also rated on a 5-point Likert-type scale from 1 (*never*) to 5 (*always*); see

Appendix. The mean scores for each version of the dangerous world were computed by

averaging item scores from each vignette and then averaging the scores from part A and B of

the two versions of the dangerous world implicit theory vignettes. In this study, the alpha

coefficients were acceptable for the dangerous world vignettes 1 and 2 (i.e., $\alpha = .71$ and α

$= .65$, respectively).

The hostile interpretations questionnaire (HIQ). The HIQ (Simourd & Mamuza, 2002) measures the overall level of hostile interpretations, based on the social information processing model. The HIQ measures the tendency to interpret ambiguous social situations as provocative or in hostile ways. The scale consists of seven ambiguous social situation vignettes, each posing four questions regarding the interpretations of these situations (e.g., "Rate how likely you think it is that his brothers and sisters are asking Chris all these questions because they are suspicious of him", "Rate how likely you think it is that his friends are always trying to get Chris pissed off"). Participants rated items on a 5-point Likert-type scale from 1 (*extremely unlikely*) to 5 (*extremely likely*). The total HIQ score is an overall measure of hostility, and represents the individual's inclination to interpret neutral social situations in hostile ways. Higher scores on the scale indicate higher hostile attributions to ambiguous social situations. Internal consistency was $\alpha = .86$ for the total HIQ score (see Simourd & Mamuza, 2000) and found to be acceptable in this study, $\alpha = .78$.

The hostile sexism questionnaire (HS). The HS is a subscale of The Ambivalent Sexism Inventory (Glick & Fiske, 1996). The questionnaire is an 11-item measure, assessing the level of hostile attitudes towards women (e.g. "Women seek to gain power by getting control over men"). Respondents provided a rating on a 6-point Likert scale from 0 (*disagree strongly*) to 5 (*agree strongly*). The mean of the item scores were calculated to obtain the overall scores. Higher scores on the scale indicate higher hostile attitudes towards women. The HS showed high internal reliability with $\alpha = .82$, consistent with the literature in which has been found to range from $\alpha = .80$ to $\alpha = .92$ (see Glick & Fiske, 1996; Masser et al., 2006).

Children and sex emotional congruence scale. This is a 15-item questionnaire (Waldron et al., 2006), measuring the belief that an individual can emotionally identify with children and can have mutually satisfying relationships with children (e.g., "I prefer to spend

my time with children"), originally from the Sex Offender Assessment Pack (Beckett, Beech, & Fisher, 1996). Items were rated on a 5-point Likert-type scale from 0 (*very untrue*) to 4 (*very true*). Item scores were summed to obtain overall scores that could range between 0 and 60. Higher scores on the scale indicate higher emotional congruence with children. This scale showed excellent reliability in this study, $\alpha = .91$, consistent with previous studies which reported high internal consistency with $\alpha = .90$ (Fisher, Beech, & Browne, 1998).

The cognitive distortions scale (CDS). The CDS (Gannon, 2006), consists of 12-items adapted by Gannon (2006) which were originally from the Opinions Questionnaire (Offending Behaviour Programmes Unit, 2000). The CDS measures the level that individuals perceive children as sexual agents (e.g., "Many children are sexually seductive toward adults"). Participants responded to each item on a 5-point Likert-type scale from 0 (*strongly disagree*) to 4 (*strongly* agree). Item scores were summed to obtain total scores that could range between 0 and 56. Higher scores on the scale indicate more agreement with distorted beliefs related to children. This scale showed good internal reliability, $\alpha = .83$.

Sample

A total of 188 people consented to take part, while 106 participants completed the whole study. We included 113 responses in the analyses. Of these 113 responses, 7 participants did not fully complete the survey but had answered the dangerous world vignettes and at least one other questionnaire. Eligibility criteria required individuals to be 18 years of age or above, and not to be a psychology graduate. Undergraduate psychology students were allowed to participate in this study. Participants included 49 males and 64 females, recruited through snowballing techniques. The mean age of the participants was 24.44 years (*SD* =

4.75). The vast majority of participants[1] (81%) were Cypriots[2] who had Turkish or Greek as their native language. The rest of the participants were from a wide range of nationalities including Turkish, British, Greek, and several others. The most common self-reported level of fluency in English was fluent ($n =71$) or advanced ($n =27$) although, there were participants with intermediate ($n =14$) and basic ($n =1$) level of English; see Table 1 for sample demographics.

Approximate location of Table 1

Procedure

The School of Psychology Research Ethics Committee at the University of Kent reviewed and approved this study prior to data collection (Ethics ID: 20154076). We sent a secure web link to prospective participants, enabling them to complete the online survey in Qualtrics. All participants received the information regarding the survey and the consent form before participation. Following this, each participant created a unique participant code maintaining anonymity and completed a demographics questionnaire. Qualtrics presented the questionnaires in a random order. Once all the questionnaires were completed, the debrief form was presented.

Results and Discussion

First, we examined the relationship patterns between variables. The means (*SD*) of variables and correlations among them are presented in Table 2. Analysis of data using Pearson's *r* indicated that there were small correlations between dangerous world 1 and hostile attribution bias and hostile sexism. Individuals who interpreted ambiguous situations

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[1] This was as a result of the success of snowballing recruitment methods using the first author's social network.
[2] Cyprus is a divided island in the Mediterranean Sea. There are two main communities residing on the island; Turkish Cypriots in the north side of the island, speaking Turkish as their first language and Greek Cypriots in the south side, speaking Greek as their mother tongue.

in a hostile way and had more hostile attitudes towards women were also more likely to endorse the beliefs in dangerous world 1. However, there was no significant correlation between hostile attribution bias and dangerous world 2 ($p = .901$). Since both versions of the dangerous world belief were based on the core belief that the world is a dangerous and threatening place, not finding an association between biased interpretation of social situations and dangerous world 2 was surprising.

On the other hand, there was a small correlation between dangerous world 2 and emotional congruence with children. Individuals who endorsed dangerous world 2 were more likely to relate themselves to children on an emotional and cognitive level. In addition, there was a moderate correlation between dangerous world 2 and children as sexual beings. Individuals who endorsed dangerous world 2 also endorsed the perception of children as sexual beings, as expected.

Approximate location of Table 2

In order to investigate if (a) hostile attribution bias, (b) hostile sexism, (c) emotional congruence with children, and (d) children as sexual beings significantly predicted the dangerous world implicit theory, multiple regression analysis was used (see Table 3). The regression model with hostile attribution bias and hostile sexism overall resulted in significant prediction of dangerous world 1, $F (2,104) = 3.73$, $p = .027$. Though significant, the two predictors explained only 6.7% of the variance in dangerous world 1. Inspection of beta values and associated significance indicated that hostile sexism was a marginally significant predictor of dangerous world 1 ($p =.070$). However, hostile attribution bias was not a significant predictor of holding a belief of the world as a dangerous and threatening place where it is a necessity to defend oneself by punishing people who seem to have intent to harm you ($p =.107$).

In a second multiple regression analysis, we examined whether the four constructs were significant predictors of dangerous world 2. The regression model with the four constructs was significant, $F(4,101) = 9.25$, $p < .001$, accounting for the 26.8% of the variance in dangerous world 2. Inspection of beta values indicated that emotional congruence with children ($p = .043$) and children as sexual beings ($p < .001$) were significant predictors of dangerous world 2 as expected. However, hostile attribution bias ($p = .218$) and hostile sexism ($p = .106$) were not[3].

Approximate location of Table 3

Overall, the results from the correlation analyses were in line with our predictions (see Table 2) that the four constructs were significantly related to holding either or both versions of the dangerous world belief, except for the hostile attribution bias, which was not significantly related to dangerous world 2. However, the results from the multiple regression analysis were not as predictive as expected. Despite our expectation that dangerous world 1 would overlap with hostile attribution bias and hostile sexism, only hostile sexism was approaching significance in explaining dangerous world 1. Regarding the findings for dangerous world 2, our results were as expected for emotional congruence with children and children as sexual beings partly explaining dangerous world 2. Again, we did not find evidence of hostile attribution bias overlapping with dangerous world 2.

Rationale for study 2

In study 1, we expected to find evidence of hostile attribution bias at least partly accounting for the belief that the world is a dangerous place in which people are likely to behave in an abusive and rejecting manner. As our results did not support this conclusion, it was essential to further examine the association between hostile attribution bias and dangerous world. By

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[3]Gender was not a significant predictor of dangerous world 1 and dangerous world 2 scores, and neither were there significant gender differences between dangerous world 1 and dangerous world 2 scores.

doing so, we also wanted to address several limitations in the first study. The majority of the participants were Cypriots who had English as a second language. As the nature of the study required a good level of English to comprehend the vignettes consisting of ambiguous situations, further research with native English speakers was warranted. Furthermore, the phrasing of some response options in the original HIQ is confusing. While we faithfully reproduced the scale from Simourd & Mamuza, (2002), participants fed back their confusion on completion of the study.

The design of the second study was the same as the first one. The measures used were also the same as in the first study except for the measure of hostile attribution bias. We believed that a more recent measure of hostile attribution bias would both eliminate the confusion and give us a clearer picture overall in relation to its association with the dangerous world.

Method

Measures

Social Emotional Information Processing Questionnaire (SEIP-Q). The SEIP-Q (Coccaro, Fanning, & Lee, 2016) is a vignette-based, self-report questionnaire recently developed to assess five components in social emotional information processing; attribution, emotional response, response valuation, outcome expectancy, response efficacy, and response enactment. The SEIP-Q consists of eight written vignettes. Each scenario depicts socially ambiguous situations where "Person B" directs an adverse action at "Person A". The participants are asked to identify with Person A and to what extent they agree with each of several attributional statements about Person B's action. These include: (a) two hostile attributional (HA) statements (e.g., "This person wanted to expose my secret", "This person wanted me to feel stupid for asking her to keep my secret"); (b) an instrumental attributional

statement (e.g., "This person wanted to impress other people") and (c) a benign attributional statement (e.g., "This person forgot that this was an important secret for me"). These attributional variables are followed by two questions about negative emotional response to the situation (e.g., "How likely is that you would be angry if this happened to you?").

Participants responded to each item on a 4-point Likert-type scale from 0 (*not at all likely*) to 3 (*very likely*). The later stages of the SEIP-Q include response evaluation and decision-making variables. To address our research questions, we only included hostile attributional (HA) statements in the analyses. The internal consistency for HA was good in our study, $\alpha = .88$, which was identical to alpha reported in previous literature (Coccaro et al. 2016).

Sample

A total of 128 responses were recorded in an online survey. Participants were recruited from the *Prolific* online participant recruitment platform. Criteria for participation were to be 18 years old or over, UK-resident, English speaking males. We inserted three attention checks within different parts of the questionnaire and we excluded responses from participants who had failed two or more of these attention checks. There were 123 responses included in the analyses as five of the participants had failed two or more attention checks.

Procedure

The School of Psychology Research Ethics Committee reviewed and approved the replication study prior to data collection (Ethics ID: 201614793174284035). The online survey was designed in Qualtrics and linked to Prolific for participant recruitment. The procedure of presenting the information regarding the survey, the consent form, and the debrief form was the same as in Study 1. Qualtrics presented the questionnaires in a random order.

Results and Discussion

We ran the same analyses as in the first study to examine the relationship patterns between variables. The means (*SD*) of variables and correlations among them are presented in Table 4. Consistent with the first study, we found small to moderate correlations between dangerous world 1 and both hostile attribution bias and hostile sexism. Similar to our findings in Study 1, individuals who interpreted ambiguous situations in a hostile way and who had more hostile attitudes towards women were also more likely to endorse the beliefs in dangerous world 1. In line with the findings in Study 1, there was no significant correlation between hostile attribution bias and dangerous world 2 (p =.240). On the other hand, and in line with the first study, results showed small significant correlations between dangerous world 2 and both emotional congruence and children as sexual beings. Individuals who appeared to relate to children on an emotional and cognitive level and who endorsed the belief that children are sexual beings also endorsed dangerous world 2 as, expected.

Approximate location of Table 4

Next, we used multiple regression analysis to test if (a) hostile attribution bias, (b) hostile sexism, (c) emotional congruence with children and (d) children as sexual beings significantly predicted participants' ratings of both versions of dangerous world in the second study (see Table 5). The first regression model with hostile attribution bias and hostile sexism was significant, $F(2,120) = 14.23$, $p < .001$, accounting for 19.2% of the variance in dangerous world 1. In contrast to Study 1, hostile sexism was a significant predictor ($p <.001$) of dangerous world 1 and hostile attribution approaching significance ($p = .055$).

In the second multiple regression analysis, we examined if the four constructs were significant predictors of dangerous world 2. The overall model was significant, $F(4,118) = 5.21$, $p = .001$. The results showed that the four constructs explained 15% of the variance in dangerous world 2. Neither emotional congruence ($p = .108$) nor children as sexual beings ($p = .104$) were significant predictors of dangerous world 2 when controlling for the other

predictors. Similarly hostile attribution bias did not predict the dangerous world 2 (p = .670). In this model, only hostile sexism was related to the endorsement of beliefs in dangerous world 2 (β = .27, p = .006) when the other variables were controlled for. This was both contrary to our expectations and inconsistent with our results from the first study. Therefore, we further investigated their relationship with a model where only emotional congruence with children and children as sexual beings were examined as predictors of dangerous world 2. Although the overall model explained a small amount of variance (9%) of dangerous world 2, it resulted in a significant prediction of the second version of dangerous world belief, F (2,120) = 5.90, p = .004. In this post-hoc analysis, children as sexual beings was a significant (p = .034) predictor of dangerous world 2, while emotional congruence with children was approaching significance (p = .066).

Approximate location of Table 5

General Discussion

The aim of this paper was to examine the associations between the dangerous world implicit theory and four other cognitive constructs: (a) hostile attribution bias, (b) hostile sexism, (c) emotional congruence with children, and (d) children as sexual beings. Evidence from the literature indicates that individuals who commit aggressive offences are more likely to interpret social situations and others' intent in a hostile way (Dodge, 1980; Lim et al., 2011; Yeager et al., 2013). Results over two studies indicated that individuals who were more likely to believe that the world is a dangerous and threatening place were also likely to interpret ambiguous social situations in a hostile way, as expected. However, we could not find any significant relationship between hostile attribution bias and dangerous world 2, which was surprising as we argued that the biased perception of the world and others as dangerous and untrustworthy would be central to both versions of the dangerous world implicit theory as conceptualised by Ward and Keenan (1999).

In the literature, offenders holding hostile sexist attitudes see women as manipulative and in need of punishment (Malamuth, & Brown, 1994). Research also shows that holding hostile sexist attitudes is associated with higher proclivity of rape (e.g., Abrams et al., 2003; Masser et al., 2006; Romeo-Sánchez, Durán, Carretero-Dios, Megías, & Moya, 2010). Findings from our two studies show that responses indicating hostile sexist attitudes were positively associated with the dangerous world measures, which incorporate beliefs that it is necessary to discipline women if their authority is threatened and beliefs that adults are not trustworthy compared to children.

In addition, findings from the two studies indicate that higher emotional and cognitive association with children was associated with dangerous world 2, which includes beliefs around seeing children as reliable and accepting. The findings also suggested that people who are more likely to interpret children as sexual beings may also be more likely to see children as willing to please their sexual desires. From the literature, we know that emotional congruence (Mann et al., 2010; McPhail et al., 2013) and children as sexual beings implicit theory (Marziano et al., 2006) were associated with sexual offending against children. Thus, these associations between emotional congruence with children, children as sexual beings and the dangerous world implicit theory were in line with our expectations.

The results from the multiple regression analyses varied over two studies. Contrary to our expectations, results from the two studies, using two different hostile attribution bias measures, suggest a lack of a robust relationship between our measures of dangerous world and hostile attributions. This finding was particularly unexpected. One explanation may be that dangerous world implicit theory and hostile attribution bias may not be sharing substantial conceptual similarity which is opposite to our hypothesis. Another explanation may be that, despite conceptual similarities between the dangerous world implicit theory and hostile attribution bias, the measurement items were not tapping effectively into their

respective constructs. On the other hand, findings for hostile sexism were indicating a stronger message. The results suggest that hostile sexism was partially overlapping with parts of the dangerous world implicit theory as conceptualised by Ward and Keenan (1999).

The regression results where we examined the predictors of dangerous world 2 were inconclusive and inconsistent between the two studies. While emotional congruence with children and children as sexual beings were significant predictors of dangerous world 2 in Study 1, they were not in Study 2. However, a further post-hoc analysis suggested that children as sexual beings was significantly related to dangerous world 2 (and emotional congruence was approaching significance) once hostile sexism and hostile attribution bias were removed from the analysis. This suggests that emotional congruence and children as sexual beings predict the second version of the dangerous world belief only when not controlling for hostile attribution bias and hostile sexism, since hostile sexism accounted for the majority of the variance in dangerous world 2.

Conclusions and future directions

Within the sexual offending literature, the implicit theories theory (Ward, 2000; Ward & Keenan, 1999) was an impressive attempt to apply a social cognitive framework to an aetiological understanding of sexual offending against children (Gannon & Polaschek, 2006; Ó Ciardha & Ward, 2013). Consequently, many researchers have concentrated efforts into investigating the empirical evidence for distinct psychological constructs mapping onto Ward and Keenan's (1999) five implicit theories (e.g., Gannon, et al., 2006; Keown et al., 2008, 2010; Marziano et al. 2006; Paquette et al., 2014). We argue that this might have resulted in underestimating the conceptual similarities between the five implicit theories. Moreover, researchers have drawn heavily on the implicit theories as conceptualised by Ward and Keenan (1999) to propose further theories or models (e.g., the integrated model of risk and aetiology; Beech & Ward, 2004; an integrated theory of sexual offending; Ward & Beech,

2006) or design rehabilitation models (e.g., an implicit theory approach to challenge
cognitive distortions; Drake et al., 2001; the good lives model of treatment; Ward & Gannon,
2006; Ward, Mann & Gannon, 2007). However, they have done so in the absence of a large
evidence base supporting the hypothesised conceptualisation of these cognitive constructs
(Gannon & Polaschek, 2006; Keown et al., 2010).

While we acknowledge that the similarities (i.e., shared variance) between the
dangerous world implicit theory and other constructs were relatively low, our results still
indicate that multiple constructs (e.g., hostile sexism, children as sexual beings) are *partly*
overlapping with Ward and Keenan's (1999) conceptualisation of the dangerous world
implicit theory. We argue that the dangerous world implicit theory itself may be alternatively
conceptualised as reflecting the co-occurrence of potentially criminogenic constructs in
individuals who sexually abuse children. If this argument is supported by additional research,
it may encourage practitioners who use the implicit theories theory to guide case formulation
(see Ward & Gannon, 2006), to examine whether it is possible to parse an apparent
dangerous world implicit theory into constructs that appear to better reflect their client's
offence-supportive thinking. In other words, rather than assessing a client for the presence or
absence of a dangerous world implicit theory, a practitioner might consider whether
psychological constructs such as hostile sexism, emotional congruence with children, or the
children as sexual beings implicit theory, provide an alternative framework through which to
understand that individual's treatment needs.

Interestingly, despite hostile sexism being found to share a substantial amount of
variance with both versions of the dangerous world implicit theory in current studies, hostile
sexism has not been a primary focus of research when examining psychological constructs in
relation to sexual offending against children—but rather has been mostly associated with rape
(e.g., Abrams et al., 2003; Masser et al., 2006; Romeo-Sánchez et al., 2010). Future research

should, therefore, seek to understand the similarities between the conceptualisation of hostile sexism and the dangerous world implicit theory, as well as the role of hostile sexism in sexual offending against children; if there is one.

One of the core hypotheses in our studies was the conceptual similarity between the dangerous world implicit theory and hostile attribution bias, in particular, was not supported. Therefore, future research should investigate the distinction between dangerous world belief and hostile attribution bias and further explore why hostile attribution bias does not appear to substantially overlap with the dangerous world implicit theory, despite conceptual similarities between the two constructs. When working on the dangerous world implicit theory, researchers should develop evidence of the validity of the tools used to measure the construct. Establishing construct validity is an iterative process, but the current lack of this evidence base means that we cannot rule out poor construct validity as an explanation of our counter-hypothetical findings.

In addition to these, although gender was not a significant determinant of participants' responses to the dangerous world implicit theory vignettes in Study 1, it should be noted that the dangerous world vignettes were not tailored differently for males and females in our study. Therefore, future research with females could consider using female characters in the vignettes in order to be in line with conceptual suggestions in the literature (see Gannon et al., 2012). Finally, given the two studies included community samples only, our findings need to be replicated and further examined using forensic populations.

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Table 1

Study 1: Sample Demographics

Demographic Categories	(N=113)	Percent
Nationality	Cypriot	81
	British	7
	Turkish	5
	Greek	2
	French	2
	Other	4
Gender	Male	43
	Female	57
Age	19-23	55
	24-28	33
	29-32	8
	33-47	5
Level of English	Fluent	63
	Advanced	24
	Intermediate	12
	Basic	1

Table 2

Study 1; Means, standard deviations, and Pearson's correlations among variables

Variable	Mean (SD)	HS	EC	CSB	DW1	DW2	DW1a	DW1b	DW2a	DW2b	DW
1 HAB	83.68 (11.48)	.20*	.29**	. 11	.21*	.01	.16	.19	.04	-.06	.14
2 HS	2.10 (.90)		.12	.25**	.21*	.24*	.14	.22*	.18	.19*	.28**
3 EC	39.06 (12.91)			.21*	.14	.24*	.09	.16	.17	.22*	.23*
4 CSB	19.42 (6.12)				.10	.46***	-.01	.21*	.41***	.24*	.33***
5 DW1	1.82 (.60)					.28**	.88***	.73***	.22*	.21*	.82***
6 DW2	1.68 (.55)						.21*	.26**	.91***	.53***	.78***
7 DW1a	2.35 (.87)							.31**	.20*	.08	.70***
8 DW1b	1.29 (.60)								.16	.29**	.63***
9 DW2a	2.23 (.93)									.12	.68***
10 DW2b	1.14 (.47)										.45***
11 DW	1.75 (.46)										

Note. HAB = hostile attribution bias, $N = 109$; HS = hostile sexism, $N = 111$; EC = emotional congruence with children, $N = 110$; CSB = children as sexual beings, $N = 109$; DW1 = dangerous world 1, $N = 113$; DW 2 = dangerous world 2, $N = 113$; DW1a = dangerous world 1 part A, $N = 113$; DW1b = dangerous world 1 part B, $N = 113$; DW2a = dangerous world 2 part A, $N = 113$; DW2b = dangerous world 2 part B, $N = 113$; DW = dangerous world total score, $N = 113$. * $p<.05$, **$p<.01$, ***$p<.001$

Table 3

Study 1; Multiple regression analysis of HAB, HS, EC and CSB as predictors of Dangerous World 1 and Dangerous World 2

Predictors of DW1	β	t	p
HAB	.16	1.63	.107
HS	.18	1.83	.070
Predictors of DW2	β	t	p
HAB	-.11	-1.24	.218
HS	.15	1.63	.106
EC	.19	2.05	.043
CSB	.41	4.58	.000

Note. $N = 107$ and $N = 106$, respectively. HAB = hostile attribution bias; HS = hostile sexism; EC = emotional congruence with children; CSB = children as sexual beings; DW = dangerous world total score; DW1 = dangerous world 1; DW2 = dangerous world 2.

Table 4

Study 2; Means, standard deviations, and Pearson's correlations among variables

Variable	Mean (SD)	HS	EC	CSB	DW1	DW2	DW1a	DW1b	DW2a	DW2b	DW
1 HAB	1.07 (.46)	.39***	.15	.14	.31**	.11	.31**	.21*	.15	-.04	.25**
2 HS	1.98 (1.13)		.17	.23*	.41***	.31***	.47***	.20*	.35***	.07	.42***
3 EC	14.68 (13.19)			.32***	.06	.23**	.06	.03	.32***	-.06	.16
4 CSB	6.55 (5.58)				.32***	.25**	.26**	.29**	.27**	.09	.33***
5 DW1	1.78 (.66)					.50***	.91***	.82***	.41***	.44***	.89***
6 DW2	1.43 (.55)						.38***	.52***	.93***	.64***	.84***
7 DW1a	2.24 (.87)							.50***	.34***	.28**	.77***
8 DW1b	1.33 (.65)								.39***	.52***	.79***
9 DW2a	1.78 (.90)									.30**	.75***
10 DW2b	1.09 (.43)										.61***
11 DW	1.61 (.53)										

Note. N = 123. HAB = hostile attribution bias; HS = hostile sexism; EC = emotional congruence with children; CSB = children as sexual beings;

DW1 = dangerous world 1; DW 2 = dangerous world 2; DW1a = dangerous world 1 part A; DW1b = dangerous world 1 part B; DW2a =

dangerous world 2 part A; DW2b = dangerous world 2 part B; DW = dangerous world total score.

* *p*<.05, **p<.01, ***p<.001

Table 5

Study 2; Multiple regression analysis of HAB, HS, EC and CSB as predictors of Dangerous World 1 and Dangerous World 2

Predictors of DW1	β	t	p
HAB	.17	1.94	.055
HS	.34	3.83	.000
Predictors of DW2	β	t	p
HAB	-.04	-.43	.670
HS	.27	2.83	.006
EC	.15	1.62	.108
CSB	.15	1.64	.104
Predictors of DW2	β	t	p
EC	.17	1.86	.066
CSB	.20	2.14	.034

Note. N = 123. HAB = hostile attribution bias; HS = hostile sexism; EC = emotional congruence with children; CSB = children as sexual beings; DW = dangerous world total score; DW1 = dangerous world 1; DW2 = dangerous world 2.

Appendix

Dangerous World (DW) Vignettes

We developed four vignettes based on the dangerous world implicit theory (Ward and Keenan, 1999).

Vignette DW1 part A: Tom thinks that world is a dangerous place. He believes that other people always put their own interests first. They're normally willing to be abusive or to reject him to promote their own interests. Tom believes that it is often necessary to fight back in order to show other people who's boss. This might involve punishing individuals who do him harm and to make sure he always comes out on top. Tom is ready to strike back when necessary and he regularly asserts his dominance over others.

Please answer the following questions thinking about Tom:

Can you identify with Tom?

1	2	3	4	5
No, I don't think like Tom at all		I can identify somewhat with Tom's worldview		Yes, I see the world as Tom does

Do you ever find yourself thinking like Tom?

a) Never

b) Rarely

c) Sometimes

d) Often

e) Always

Vignette DW1 part B: Tom has some specific views about women and children. If women or children threaten Tom or need to be disciplined, he has no problem giving them what is coming to them. Tom sometimes feels he has to teach the women in his life a lesson to put them in their place, especially if they question his authority or the authority of other men.

Thinking specifically about Tom's views on women and children, please answer the following questions:

Can you identify with Tom?

1	2	3	4	5
No, I don't think like Tom at all		I can identify somewhat with Tom's worldview		Yes, I see the world as Tom does

Do you ever find yourself thinking like Tom?

    a) Never

    b) Rarely

    c) Sometimes

    d) Often

    e) Always

Vignette DW2 part A: Similar to Tom, Steven sees the world as threatening. Steven believes that adults are unreliable while children are dependable. For Steven, many people are untrustworthy and rejecting. He feels that people are often rejecting and will take unfair advantage of him or of other similar men who are often blameless. Adults are the worst for behaving like this. Steven feels that he is unable to get his own back if adults threaten him or reject him. Children are more reliable, accepting and be able to be trusted. For Steven children are more caring and loving and will even put Steven's needs before their own. He feels that children will never reject him. Steven believes that children give more acceptance and love than adults.

Please answer the following questions thinking about Steven:

Can you identify with Steven?

1	2	3	4	5
No, I don't think like Steven at all		I can identify somewhat with Steven's worldview		Yes, I see the world as Steven does

Do you ever find yourself thinking like Steven?

  a) Never

  b) Rarely

  c) Sometimes

  d) Often

  e) Always

Vignette DW2 part B: Steven has some further specific beliefs about children. He believes that children are innocent and want to please adults. He also thinks that in under circumstances, children can benefit from sex with an adult. Even young children can understand Steven's sexual desires and are happy to satisfy him. This can make children feel loved and wanted.

Thinking specifically about Steven's views on children and sex, please answer the following questions:

Can you identify with Steven?

1	2	3	4	5
No, I don't think like Steven at all		I can identify somewhat with Steven's worldview		Yes, I see the world as Steven does

Do you ever find yourself thinking like Steven?

a) Never

b) Rarely

c) Sometimes

d) Often

e) Always