

Short- and Long-Term Cumulative Risk Effects on Aggression

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Abstract

Previous research has shown a causal link between aggression and a range of internal and external risk factors. However, most of the literature has examined these factors in isolation, and although recent research has suggested that a cumulative risk approach to aggression should be adopted (e.g., Gentile & Bushman, 2012), there is little empirical research to support this view. This current study addresses this gap by examining the effects of multiple aggression risk factors for short- and long-term aggression. In study one, participants completed questionnaires measuring a wide range of internal and external risk factors for aggression. Results showed that internal risk factors were the most robust predictors, and tended to cluster in the individual. In study two, groups experienced between zero and three risk factors for aggression concurrently (neutral video game, violent video game, violent game in very hot room, violent game in very hot room with loud noise). Measures of aggressive behaviour, and internal state were taken. Overall exposure to more risk factors tended to increase aggressive responses, and aggression related internal states. Implications for the findings are discussed with reference to the General Aggression Model (Anderson & Bushman, 2002), and cumulative risk models.

Declaration

I declare that the original works found in this thesis, to the best of my knowledge, contain no material that has been previously published, written by another individual, and has not been accepted for the award of another higher degree at another university or institution. The data collected in this thesis was obtained from research projects conducted with the approval of the Macquarie University Human Research Ethics Committee (Human Sciences).

Ethics approval reference: 5201500081

A handwritten signature in cursive script, appearing to read 'Chanelle Tarabay', written in dark ink.

Chanelle Tarabay

October 9, 2015

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1. Introduction

The multi-causal nature of aggression has long been acknowledged, with instances of aggression often cited as being caused by factors that are both internal and external to the person (e.g., Anderson & Bushman, 2002; Gentile & Bushman, 2012). Internal factors include aggressive attitudes and beliefs (e.g., Huesmann & Guerra, 1997), callous-unemotional or aggressive personality traits (e.g., Baumeister, Bushman, & Campbell, 2000), and impulsive temperament (e.g., Vigil-Colet & Codorniu-Raga, 2004). External factors include violent media exposure (Bushman & Anderson, 2015), hot temperatures (Anderson, 2001), and loud aversive noises (Geen & McCown, 1984). These can all be thought of as causal risk factors for aggression. Given the complex causal nature of aggression, and given the fact that aggression is one of the largest burdens on public health (World Health Organisation, 2004), providing an adequate account of how these risk factors interact can help to address its negative effects, and minimise this burden.

Even though long lists of causal risk (and protective) factors can be produced, there is little research investigating how such factors combine in causing aggression. Indeed, almost no empirical research has been conducted on whether an accumulation of factors increases the immediate risk of aggression. Because of this gap in the literature, there have been calls for studies to examine aggression-related phenomena (e.g., media violence exposure) within a cumulative risk and resiliency framework (e.g., Gentile & Bushman, 2012). Within this framework, the factors underlying aggressive behaviour are understood in context of each other (Gentile & Bushman, 2012), and even small risk factors can have important effects (Huesmann & Taylor, 2003, 2006). Adopting this framework can allow researchers to more accurately assess the relative effects of specific variables of interest in relation to each other.

Several cumulative risk and resiliency accounts of violent media effects have been put forward (e.g., Boxer, Huesmann, Bushman, O'Brien, & Mocerri, 2009; Exelmans, Custers, &

Van den Bluck, 2015; Gentile & Bushman, 2012), whereby violent media exposure is seen as one of many risk factors for aggression but is neither necessary nor sufficient to elicit moderate aggression or violence on its own. However as a contributing risk factor, even when the effect size is small, it can combine with other risk factors to produce important effects (Gentile & Bushman, 2012; Huesmann & Taylor, 2006). Risk factor accounts for aggression (and subtypes of aggressive behaviours such as cyberbullying) have also been produced outside of the media violence context (e.g., Barlett, 2015; Farrington, 2000; Loeber & Hay, 1997). These findings all suggest that over time, risk factors may have a cumulative effect on aggressive behaviour, and combine to play a role in the development of aggressive behavioural patterns, and aggressive personality. Therefore, it appears that such risk factors are best understood in context of one another.

However, there seem to be some noteworthy gaps in the literature. To the best of the author's knowledge, there is not yet a descriptive account of how potential risk (and protective) factors for aggression accumulate and interact. In addition, the aforementioned findings have all focused on the long-term development of aggressive patterns of behaviour, and no experimental tests of cumulative effects in the short-term have been conducted. Therefore, it is unknown whether or not an accumulation of risk factors for aggression in a given situation would increase the likelihood of aggression concomitantly. This thesis aims to address these two gaps in the literature in two separate studies. In the first, multiple risk factors for trait aggression will be examined in the presence of each other, with the relative strength of these risk factors being determined. The second study is an experimental investigation of whether an accumulation of external risk factors causes a linear increase in the likelihood of aggression in the short-term.

1.1 Definitions of Aggression and Violence

Aggression is any behaviour carried out with the intent to cause harm to another person who is motivated to avoid the harm (Anderson & Bushman, 2002; Warburton & Anderson, 2015). Thus, accidental harm (e.g., unintentionally bumping into someone who then falls over), or harm that is caused with the consent of the other person (e.g., surgery pain) are not aggressive because there is either no intent to cause harm, or the target is not motivated to avoid the harm. The term aggression specifically applies to *behaviours* that cause harm, and as such any underlying thoughts and feelings do not meet the definition. Whilst these may be underlying mediators of aggression, they are nonetheless distinct from it (Anderson & Bushman, 2002; Warburton & Anderson, 2015). It is also worth noting that the terms “violence” and “aggression” are not interchangeable (Warburton & Anderson, 2015). Violence is a subset of aggression, used to describe highly aggressive acts where the intent of the perpetrator is to cause extreme harm that results in severe injury or death (e.g., shooting; Anderson & Bushman, 2002).

Aggression can be categorised with respect to its form and function. Forms of aggression include *physical aggression* (i.e., using tangible means to cause bodily harm), *verbal aggression* (i.e., using words to cause emotional harm), *relational aggression* (i.e., causing harm to a person’s relationships or reputation), *direct aggression* (i.e., harm caused in the presence of the target), and *indirect aggression* (i.e., harm caused in the absence of the target; Warburton & Anderson, 2015). Functions of aggression may include reacting to a provocation (i.e., reactive, hostile, or hot aggression), using aggression to obtain something (i.e., proactive, instrumental, or cold aggression), or simply responding to a threat with a fight or flight response (Warburton & Anderson, 2015). However, such distinctions are limited as sometimes aggressive acts can serve multiple purposes and address multiple aims (e.g., an act could be proactive, but be a long-term reactive response to past grievances; Bushman &

Anderson, 2001). As a result, recent descriptions of the functions of aggression have involved fitting aggressive acts along three dimensions: the degree to which the intention is to harm the target versus benefit the perpetrator, the level of hostility or agitation present, and the degree to which the aggression has been thought through (Anderson & Huesmann, 2003; Warburton & Anderson, 2015).

1.2 Theories of Aggression

Most theories of aggression stem from research within a socio-cognitive framework, and have common underpinnings that can help to understand the processes that cause aggression and aggression-related outcomes. Early theories such as Excitation Transfer Theory (Zillmann, 1988) and Social Cognitive Theory (see Bandura, 2001) focused on arousal- and learning-based mechanisms to explain aggressive behaviour, respectively. Excitation Transfer Theory posits that if two arousing events occur within a short time span (e.g., a sexual encounter followed closely by an argument), then the arousal induced by the first event may be transferred to the second event, leading to an increased likelihood of aggressive responding (Zillmann, 1988). Social Cognitive Theory proposes that individuals model aggressive behaviour that, is observed and potentially adopted by another (Bandura, Ross, & Ross, 1961, 1963).

As cognitive science developed, research began to demonstrate that thoughts, feelings, and action tendencies are interconnected within a neural network (e.g., A. M. Collins & Loftus, 1975). As a result, newer theories such as Cognitive Neoassociation Theory (Berkowitz, 1984, 1989, 1990) and Script Theory (Huesmann, 1986, 1988) arose, linking these theories with changes in associative neural networks. These theories posit that risk factors eliciting aggression activate affective and cognitive structures (including scripts and schemas), leading to the increased likelihood of an aggressive response. More recently, all of these theories have been integrated into the General Aggression Model (GAM; Anderson &

Bushman, 2002), which focuses on the activation of associative neural networks, and the influence of bodily arousal as processes that underpin aggressive behaviour.

1.2.1 The General Aggression and General Learning Models. The GAM (Anderson & Bushman, 2002) currently stands as the dominant model of aggression as it can be applied to many situations, and accounts for many different risk factors for aggression. The basic formulation of the GAM describes an instance of short-term aggression (see Figure 1), but it also describes how this feeds back into a person's thoughts and feelings about aggression, thus having a long-term effect (see Figure 2). This breadth of explanation makes the GAM a key foundation for this paper in examining many different risk factors for aggression. What is also of note is that the GAM has been extended into the General Learning Model (GLM; Buckley & Anderson, 2006), to provide an account of the many factors that promote prosocial behaviour, some of which may be thought of as protective factors for aggression.

In the initial part of the GAM, person factors interact with situational factors. According to the model, many internal 'person' factors that are related to the individuals predisposition to aggress (i.e., factors such as gender, personality, attitudes, and cognitive scripts), interact with external risk factors stemming from the situation (i.e., cues and triggers for aggression such as provocation, media violence, heat, and noise). This interaction leads to specific changes to the internal state of the individual in three key domains; affect, cognition, and arousal. Affective, cognitive and arousal states can be operationalised in many ways, with different methods potentially allowing for a degree of overlap across these domains. For example, measures of hostility, a partially affective and cognitive affective feature of aggression (Anderson, Deuser, & DeNeve, 1995; Barlett, Harris, & Bruey, 2008), overlap both the affective and cognitive domains. Measures of general affect can specifically target the affective domain (Brummert Lennings & Warburton, 2011), whilst measuring activated

cognitions can specifically target cognitive components underlying aggression. Finally, one can measure arousal by measuring heart rate, skin conductance, or blood pressure (e.g., Geen, 1978), or by administering questionnaires pertaining to physiological and stress arousal. Arousal is the most difficult GAM route to measure and interpret, as the body's arousal systems are complex and sometimes opposing. It should be noted that arousal does not increase aggression per se, but can increase the likelihood of aggression by other means such as compelling a person to act on an aggressive impulse (Anderson et al., 1995).

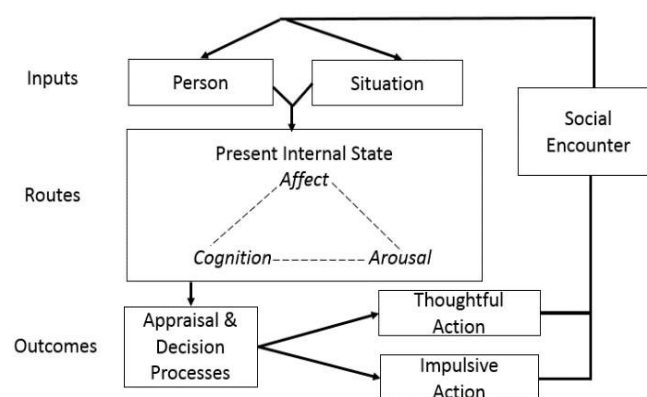


Figure 1. A graphical representation of the underlying processes in the GAM in an instance of aggression (adapted from Anderson & Bushman, 2002)

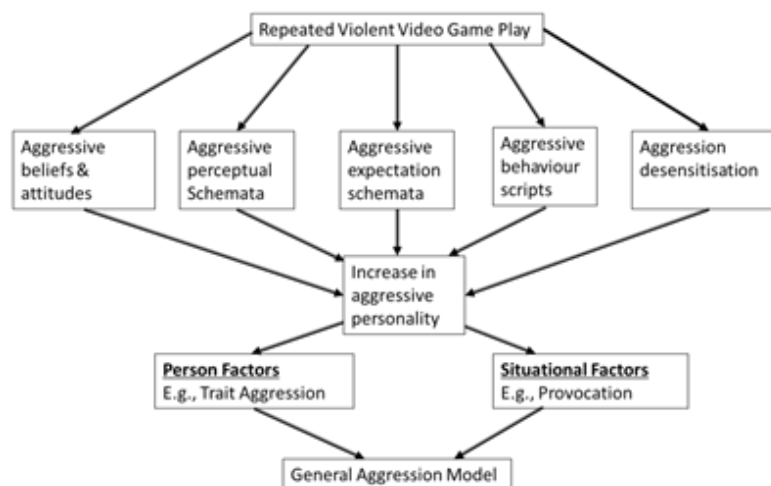


Figure 2. A graphical representation of how long-term aggressive outcomes occur, and how this can then feedback into short-term instances of aggression as explained by the GAM (adapted from Anderson & Bushman, 2002).

Because the GAM assumes that changes to affective and cognitive internal states occur through spreading activation (i.e., the activation of one neural structures spreads to

other connected neural structures), changes in any single domain can lead to changes in the other domains. After these changes occur, the person may be more or less inclined to aggress, depending on the activated cognitions and feelings. For example, if a person is provoked they may lash out because they experience high arousal, feel angry and are thinking hostile thoughts. Alternatively, if an individual has the time and capacity, and this immediate response has undesirable consequences, the individual may reappraise (i.e., consider alternative courses of action and their consequences) before taking a more thoughtful course of action (Anderson & Bushman, 2002). Although thoughtful responses are usually less aggressive, individuals may also bide their time, and respond with a delayed vengeful act.

The GLM also explains short-term effects, and consists of the same processes described previously in the context of the GAM. However, the GLM is a broader model that applies to all behaviour, not just aggressive behaviour. For example, The GLM has been used to explain prosocial behaviour (e.g., Greitemeyer, Hollingdale, & Traut-Mattausch, 2012) because situational (e.g., prosocial media) and personal factors (e.g., trait empathy) can interact to change internal states (e.g., altruistic thoughts), which can lead to prosocial behaviour. The GLM also extends the GAM by providing more detail about the relevant person characteristics (Buckley & Anderson, 2006), and about the long-term influence of risk factors on aggression.

The processes proposed for the long-term acquisition of trait aggression in the GAM and GLM is through learning and other social-cognitive processes (Anderson & Bushman, 2002). The GLM in particular highlights that repeated exposure to situational risk factors for aggression (e.g., violent media) can lead to the development of easily accessed aggressive knowledge structures (e.g., scripts and schemas; Bushman & Huesmann, 2006) that can guide behaviour with or without awareness of their operation. These knowledge structures can then be classified as person factors, which can serve to increase or decrease the likelihood of

aggression. The theoretical underpinnings related to internal ‘person’ factors and external ‘situational’ factors of the GAM and GLM serve a cumulative risk framework for aggression well, as this highlights that both types of factors can combine, resulting in short- and long-term aggressive outcomes. In addition, the GLM also suggests that a range of external risk factors that influence aggression in the short-term can be risk factors for long-term aggression by strengthening existing aggressive scripts and schemas, and increasing trait aggression. For example, a person exposed to a lot of violence, real or virtual, will have a neural network of thoughts and feelings linked to aggression, including schemas, scripts, and aggressive cognitive biases, that may influence later instances of aggression. It is also worth noting that both the GAM and GLM have gained considerable support in the literature, demonstrating that the theoretical processes underlying short- and long-term aggressive outcomes do indeed seem to occur (e.g., Anderson, et al., 2003; Anderson et al., 1995).

1.2.2 Cumulative Risk and Resiliency. Whilst most research that has been conducted has focused on single risk factors related to aggression, a growing body of research has begun to investigate their cumulative effects (e.g., Boxer et al., 2008; Gentile & Bushman, 2012). The idea of a cumulative risk and resiliency model stems from the public health domain, where illness is less likely to occur when the ratio of protective to risk factors is greater, and more likely to occur if the opposite is true (Exelmans et al., 2015; Farrington, 2000; Kraemer et al., 1997). A similar principle is thought to apply to aggression, thus uncovering individual risk (and protective) factors is important for understanding this phenomenon (Farrington, 2000; Ribeaud & Eisner, 2010). This has most notably been seen in developmental research, where it has been shown that better outcomes occur for children who are more resilient, and are less likely to obtain or be exposed to risk factors (e.g., Garmezy, 1993; Masten et al., 1999; Masten & Coatsworth, 1998). Risk factors, of course, cluster

differently for different people, and the effects of any single factor can be different for different people (Valkenburg, 2015).

Although this seems to make logical sense, some researchers have been critical of this approach, as it fails to adequately account for the differential strength and importance of some risk factors (Evans, Li, & Whipple, 2013). That is, the emphasis has tended to be placed on the *number* of risk factors influencing an outcome rather than their differing *strengths*. This seems to be a reasonable criticism, and so in this thesis, the first study addresses the issue of which risk factors may be greater or lesser contributors to aggression. This does not mean lesser risk factors are not important: any given risk factor is neither necessary nor sufficient to cause aggression (Bushman & Anderson, 2015; Warburton & Anderson, 2015), and smaller risk factors can be important, as they can add to a cumulative effect and be the tipping point for any given instance of aggression (Gentile, 2014; Gentile & Sesma, 2003; Huesmann & Taylor, 2006).

However, because aggression is multi-causal (Anderson & Bushman, 2002), understanding the relative contribution of various risk factors is theoretically important. One way of mapping out the various risk factors is along an axis: internal versus external (see Figure 3 below). By taking such an approach, and ascertaining which risk factors have a stronger influence on aggressive behaviour, it is theoretically possible to determine whether stronger risk factors cluster according to where they are situated along this axis.



Figure 3. A graphical representation of the proposed internal versus external axis.

Previous research has indicated that categorically classifying risk factors for aggression as internal or external can be useful (Ribeaud & Eisner 2010). However, it is acknowledged that some factors may not be so easily classified, so this approach would be a

merely indicative, but helpful way of understanding how factors may cluster. A second axis: distal versus proximal, may also be of use when mapping risk factors for aggression (e.g., Ribeaud & Eisner 2010), but there are some difficulties with adopting such an approach. Because some risk factors can be operationalised as distal or proximal, depending on the type of research being conducted, it can be hard to determine where risk factors may lie on this axis. For example, aggressive scripts and schemas, and normative beliefs about aggression are typically acquired at some point in a person's past (e.g., Dodge & Crick, 1990; Huesmann, 1988; Husemann & Guerra, 1997), but can influence proximal short-term instances of aggression (e.g., Li, Nie, Boardley, Dou, & Situ, 2015). Therefore situating normative beliefs about aggression along the suggested distal versus proximal axis would be contextual and could be quite problematic. Thus this approach will not be adopted here.

For the purposes of this thesis, it is assumed that the degree to which a risk factor is internal can be determined by how strongly rooted within the individual it is. This will depend on how strongly based in genetics it is, when it becomes developmentally apparent, and the extent to which it has become automatised (e.g., how chronically accessible a script or schema is). For example, temperamental risk factors would be more internal than trait risk factors, because they appear at birth whereas many traits develop over time. Risk factors stemming from scripts and schemas would be less internal than both temperamental and trait risk factors as they are learnt, and can develop at later stages in life. External risk factors can be situated with reference to Bronfenbrenner's (1979) ecological systems theory, in which spheres of influence are categorised in terms of distance from the person. These influencers are further classified with respect to the degree to which an individual is enmeshed with them, such that influencers that come into contact with the individual earlier in development have greater influence on them (Bronfenbrenner, 1986). This theory can be adapted to the internal-external axis approach, as external influences such as family, peers, local

community, and wider culture can all influence personality and behaviour, including aggressive behaviour at different points in time. Thus, sociodemographic characteristics would be more externally located than parenting styles, because sociodemographic characteristics do not directly impact upon the individual until they become old enough to engage in their social environment. Parenting styles, on the other hand exert direct influences on the individual from birth.

Most cumulative risk research has primarily focused on risk factors that can be considered as ‘external’, such as peer influence, parenting, violent media exposure, and sociodemographic characteristics (Boxer et al., 2009; Loeber & Hay, 1997; Ribeaud & Eisner, 2010). This is because a number of researchers have drawn from Bronfenbrenner’s (1979) ecological systems theory, or have proposed systems similar to it (e.g., Boxer et al., 2008). Despite the apparent emphasis on external factors in cumulative risk research, Ribeaud and Eisner (2010) concluded from their study that risk factors that are highly internal (e.g., low trust) have stronger effects on long-term aggression than more external risk factors (e.g., peer influence). However, because cumulative risk research has been criticised for being atheoretical (Evans et al., 2013), a more nuanced approach considering the degree to which risk factors can be considered as internal or external can help to provide a stronger theoretical basis for such conclusions. Thus, exploring datasets that examine the effects of a multitude of risk factors that are different in the degree to which they are internal or external, may be theoretically important. Another advantage to this approach is that when it is determined which risk factors for aggression are strongest, one can also see whether they cluster by type along the axis (for example, it may be the case that trait and temperament variables, which cluster at one end of the axis may also be the strongest predictors as a group). It is also possible to ascertain whether internal risk factors may be more likely to influence long-term,

chronic aggressive behaviour, and external risk factors exert most of their influence on short-term instances of aggression.

1.3 Risk Factors

There are a myriad of risk factors that influence aggression. It is beyond the scope of this paper to create an exhaustive list of such risk factors, as only a number of them can be assessed in this thesis due to methodological and participant recruitment restraints. Thus, only those most relevant to this study will be discussed below. Nonetheless it is worth noting the role of environmental external factors such as those pertaining to family, peers, and the local community as well as internal risk factors based in neurochemistry.

Family risk factors, for example, can include having an aggressive parent who models aggressive behaviours that are learned and adopted as scripts by children (Boxer, Gullan, & Mahoney, 2009; Eron, Huesmann, & Zelli, 1991). Such effects however can be attenuated if at least one parent provides a strong positive relationship, and other family members such as siblings and grandparents provide support (Werner, 1993). Peer groups can also impact on aggressive outcomes in children, as children who are similarly aggressive tend to associate with one another, and encourage further aggressive behaviour (Espelage, Holt, & Henkel, 2003). In addition, children who behave aggressively are often rejected by the peer group for exhibiting such behaviour, which further exacerbates their aggression and encourages them to engage with other similarly aggressive children because they are less rejecting (Dodge et al., 2003). Finally with respect to the community, those who witness community violence are more likely to develop aggressive normative beliefs, thus increasing the likelihood of the development of long-term aggressive patterns of behaviour (Guerra, Huesmann, & Spindler, 2003). Nonetheless, the community can also provide a supportive network (e.g., through the formation of youth groups), thus providing the basis for the development of resiliency factors

that protect against aggressive developmental trajectories (Guerra, Huesmann, Tolan, Van Acker, & Eron, 1995; Werner 2003).

Understanding the role of neurotransmitters in aggression is also critical. The neuronal pathways they travel mediate the link between many of the known risk factors and aggression. For example, it has been shown that serotonin levels are linked to temperamental traits such as impulsivity, which has strong links with aggression (Pavlov, Chistiakov, & Chekhonin, 2012). Serotonin has also been shown to play a more direct role in aggression, and can thus be considered a risk factor in its own right. In particular, different serotonin receptor types have been shown to increase long-term trait aggression and short-term state aggression differentially (Oliver, 2004). More recently, it has been shown that specific polymorphs on the monoamine oxidase A gene that render it low in activity is responsible for the differential reuptake of serotonin by its relevant receptors (Buckholtz, & Meyer-Lindenberg, 2008; McDermott, Tingley, Cowden, Frazzetto, & Johnson, 2009). Thus, genetic and neurotransmitter related serotonin activity can be considered a risk factor for aggression.

1.3.1 Gender. There is strong evidence suggesting that males are more physically aggressive than females (Archer, 2004; Warburton & Anderson, 2015). There are a myriad of reasons why this is the case, one of which is the suggestion that men have higher levels of testosterone than women (Archer, 1994). However, the effect of testosterone on aggression seems to be small, indirect, and mediated by other factors such as status seeking (Eisenegger, Naef, Snozzi, Heinrichs, & Fehr, 2010). Additionally, there is evidence to suggest that gender differences on aggression are linked to contextual factors such as the presence of provocation (Bettencourt & Miller, 1996). Gender is a risk factor for both long- and short-term aggression; as males developmentally become more trait aggressive than females (Loeber & Hay, 1997), and males generally behave more aggressively in the short-term than do females, most notably when no provocation is present (Bettencourt & Miller, 1996).

1.3.2 Socioeconomic Status. Socioeconomic status (SES) is another risk factor for aggression (Murray & Farrington, 2010; Heimer, 1997), but its effects have been shown to be partially mediated by other risk factors such as social support (Dodge, Petit, & Bates, 1994). Early SES experiences can have long lasting effects. This is because individuals living in impoverished environments have less access to resources that may promote positive outcomes for individuals, fostering environments that lead to an increased likelihood for long-term aggressive conduct (Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 2002). Impoverished environments can also have effects on short-term aggression, as these environments foster situations that are more provoking (Stouthamer-Loeber et al., 2002). Thus, SES can function as a situational factor that can influence short-term instances of aggression, and can have long-term effects on trait aggression.

1.3.3 Overt and Covert Narcissism. Wink (1991) identified two types of narcissism: overt and covert. Whilst both types of narcissism are characterised by a sense of self-entitlement, callousness and superiority (Hendin & Cheek, 1997), they differ in important ways. Overt narcissists are characterised by displays of extreme grandiosity, self-admiration, and exhibitionism; whilst covert narcissists are hypersensitive, defensive, and vulnerable (Wink, 1991). Because of these differences, it may be the case that these different types of narcissism are differentially related to aggression. Indeed, past research indicates that both forms of narcissism are linked to trait aggression (Warburton, Edwards, Hossieny, Pieper, & Yip, 2008), relational aggression (Ghim, Choi, Lim, & Lim, 2015), and reactive aggression (Fossati, Borroni, Eisenberg, & Maffei, 2010). However, whilst overt narcissists typically physically lash out in instances of provocation (Bettencourt, Talley, Benjamin, & Valentine, 2006; Jones & Paulhus, 2010), covert narcissists are more likely to aggress in indirect ways (Okada, 2010). Because narcissism is an enduring personality style (Paulhus & Williams, 2002) it may contribute to long-term trait aggressive behaviour, and cause aggression in the

short-term, especially in the face of ego-threat situations (Bushman & Baumeister, 1998; Jones & Paulhus, 2010).

1.3.4 Primary and Secondary Psychopathy. Although there are various formulations of psychopathy, there seem to be two broad subtypes: primary and secondary (Levenson, Kiehl, & Fitzpatrick, 1995). Whilst both types are linked with aggressive behaviour (Hare, 1991; Levenson et al., 1995), they differ in important ways. Primary psychopaths are extremely callous and relatively unemotional, whilst secondary psychopaths tend to be more reactive and anxious (Levenson et al., 1995; Skeem, Johansson, Andershed, Kerr, & Louden, 2007). Psychopaths are reward-seeking, lack empathy, and are highly aggressive (Jones & Paulhus, 2010), often engaging in criminal and antisocial behaviour (Harris, Rice, & Lalumière, 2001). Evidence suggests that psychopathy is partially heritable, but that it typically emerges in combination with exposure to early harsh child rearing environments (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003; Yildirim & Derksen, 2015). However, it appears that primary psychopathy may be more strongly rooted in biology than secondary psychopathy, the aetiology of which seems more rooted in early home environments (Skeem et al., 2007; Yildirim & Derksen, 2015). Both primary and secondary psychopathy are strongly linked to short-term aggression (Jones & Paulhus, 2010) and trait aggression (Jones & Neria, 2015).

1.3.5 Machiavellianism. Machiavellians are characterised by hostile, callous and cynical world views, and the valuation of personal success above and beyond all else (Christie & Geis, 1970; McIlwain et al., 2012). Machiavellians are aggressive (Kerrig & Stellwagen, 2010), often engaging in bullying behaviours (Andreou, 2004; Sutton & Keogh, 2000). However, research on Machiavellianism is notoriously inconsistent, largely because Machiavellians are astute manipulators who mask their aggression, are good at placing the blame on others for their aggression (McIlwain, 2003), and only typically aggress when it

serves long-term goals (Jones & Paulhus, 2010). Their hostile world views, and hostile attribution biases (Crick & Dodge, 1996; Dodge & Coie, 1987) may be due to early exposure to harsh environments. Machiavellianism can underlie instances of short-term aggression, particularly when long-term personal goals are at stake (Jones & Paulhus, 2010), and Machiavellians tend to be higher than average on trait aggression (Jones & Neira, 2015).

1.3.6 Impulsivity. Impulsivity is characterised by poor planning, recklessness, and the inability to exert self-control, which can then lead to potentially dangerous behaviour (Sharma, Kohl, Morgan, & Clark, 2013). Impulsivity has been linked with antisocial and aggressive behaviour (Sharma et al., 2013; Vigil-Colet & Codorniu-Raga, 2004) and has also been related to aggressive personality styles such as secondary psychopathy (Levenson et al., 1995). This may be because poor planning and poor self-control in impulsive individuals may ultimately lead to aggressive behaviour (Bettencourt et al., 2006; Kuin, Masthoff, Kramer, & Schreider, 2015). Impulsivity has a strong genetic basis, and is one of many facets of child temperament (Rothbart, Ahadi, Hershey, & Fisher, 2001; Sharma et al., 2013). Impulsivity is linked to short-term instances of aggression (Kuin et al., 2015), and long-term trait aggression (Bettencourt et al., 2006; Sharma et al., 2013).

1.3.7 Normative Beliefs. Normative beliefs are concepts that define appropriate behaviour in any given situation (Huesmann & Guerra, 1997). With respect to aggression, individuals can differ on the degree to which they believe aggression is an acceptable response to conflict (Ang, Tan, & Mansor, 2011). Theoretically, these beliefs can influence aggression because if a behaviour is thought to be normal, then individuals are less inhibited in engaging in that type of behaviour. Past literature has demonstrated that these beliefs are related to aggressive behaviour (Amjad & Skinner, 2008; Huesmann & Guerra, 1997; Werner & Hill, 2010) and cyberbullying (Ang et al., 2011; Wright & Li, 2013). In addition a number of longitudinal studies have demonstrated links between normative beliefs about aggression

and the development of trait aggression (Huesmann & Guerra, 1997; Werner & Hill, 2010). Normative beliefs may also contribute to aggression in the short-term, particularly when individuals are unprovoked, by lessening resistance to aggressive impulses (Li et al., 2015).

1.3.8 Attitudes towards Violence. Attitudes are similar to beliefs, but involve broader and general evaluations that people hold (Petty & Cacioppo, 1986). Again, like normative beliefs, if individuals have more positive attitudes towards violence, they will be less inhibited in engaging in aggressive behaviour (Anderson & Bushman, 2002). Positive attitudes towards aggression have been most linked with long-term trait behavioural outcomes such as an increased proclivity towards sexual aggression (Bosson, Parrott, Swan, Kuchynka, & Schramm, 2015; Malamuth, Linz, Heavey, Barnes, & Acker, 1995), and increased use of corporal punishment on children (Lansford, Deater-Deckard, Bornstein, Putnick, & Bradley, 2014).

1.3.9 Cultures of Honour. Cultures of honour involve widespread cultural acceptance of violent behaviour in the protection of one's, or one's family's honour (D. Cohen & Nisbett, 1994; Nisbett & D. Cohen, 1996). Examples of such behaviour include 'duelling' because one's honour is besmirched, or killing one's wife if she is suspected of being unfaithful. In such cultures aggressive behaviour and violent crime are more common (Brown, Osterman, & Barnes, 2009; Travaglino, Abrams, De Moura, & Russo, 2015). Underlying beliefs relating to masculine dominance are a key part of many cultures of honour (Barnes, Brown, & Osterman, 2012). Masculine honour ideology has been especially linked to engagement in long-term criminally aggressive behaviour (Travaglino et al., 2015). In any case, acceptance of violence in the face of threats to one's honour can explain both long- and short-term aggression (e.g., D. Cohen, Nisbett, Bowdle, & Schwarz, 1996).

1.3.10 Early Maladaptive Schemas. Early Maladaptive Schemas (EMSs) are defined as dysfunctional enduring, stable concepts of oneself and others that develop in early

childhood and are usually maintained throughout adulthood unless intervened upon (Young, Klosko, & Wiershaar, 2003). There are up to 18 identified EMSs that can be classified into five domains; disconnection and rejection, impaired limits, impaired autonomy and performance, other directedness, and over-vigilance and inhibition (Young, 2004). Very little research on the effect of EMSs on aggression has been conducted. Nonetheless some evidence suggests that, schemas in the disconnection/rejection domain (i.e., five schemas centred around feelings and beliefs that one's needs will not be met by others), and the impaired limits domain (i.e., two schemas surrounding feelings and beliefs pertaining to the ability to exert self-control and cooperate with others) are the most strongly linked to aggression (Dozois, Martin, & Faulkner, 2013; Tremblay & Dozois, 2009; Warburton & McIlwain, 2005). EMSs can especially influence aggressive conduct in the long-term because they are inherently enduring constructs (Tremblay & Dozois, 2009) that are linked with enduring aggressive personality disturbances (e.g., borderline traits, psychopathy, narcissism, and Machiavellianism; Chakhssi, Bernstein, & de Ruiter, 2014; Jovev & Jackson, 2004; Láng & Birkás, 2014; Zeigler-Hill, Green, Arnau, Sisemore, & Myers, 2011), but they may also be able to influence short-term instances of aggression as they exert an influence on the types of cognitions activated when deciding whether or not to aggress.

1.3.11 Adult Attachment. Developed early in childhood, attachment styles are stereotyped patterns of relating to other people that are based on internalised expectations of what constitutes appropriate relational experiences (Hazan & Shaver, 1987; N. L. Collins & Read, 1990). N. L. Collins and Read (1990) identified three underlying dimensions to attachment styles: the degree to which individuals feel close, dependent, and anxious in relationships. These dimensions map onto Hazan and Shaver's (1987) three proposed attachment styles; secure, avoidant, and anxious-ambivalent, respectively. Avoidantly attached individuals are more hostile, whilst anxiously attached individuals are more

uncontrollably angry (Mikulincer, 1998). Fournier, Brassard, and Shaver (2011) also found that in instances of intimate partner violence, attachment anxiety was related to aggression but attachment avoidance was not. Nonetheless, it seems apparent that the anxious and avoidant dimensions of attachment are related to aggression in both the short- (Fournier, Brassard, & Shaver, 2011) and long-term, as these patterns of relating and engaging with individuals persist over time (Hazan & Shaver, 1987).

1.3.12 Mental Health. Various mental health problems have been linked with increased incidences of aggression (Hoeve et al., 2015; Monahan, 1992). In particular, callous personality disorders such as Antisocial Personality Disorder (Schaeffer, Petras, Ialongo, Poduska, & Kellam, 2003), and Borderline Personality Disorder (Reuter, Sharp, Temple, & Babcock, 2015); as well as paranoid psychosis (Brennan, Mednick, & Hodgins, 2000), and drug and alcohol dependence (Arseneault, Moffit, Caspi, Taylor, & Silva, 2000) have all been shown to be linked to aggression and violent crime. In addition, non-clinical level mental health issues such as stress (Agnew, 2001; Verona & Kilmer, 2007) have also been linked to aggression and violent crime. This causal link has been demonstrated in both short-term single instances of aggression (Verona & Kilmer, 2007), and long-term chronic aggressive misconduct (Agnew, 2001).

1.3.13 Heat and Noise. Research has consistently shown that hot temperatures increase aggression (e.g., Anderson et al., 1995: Anderson, Anderson, Dorr, DeNeve, & Flanagan, 2000). Studies have especially found that, with reference to the GAM (Anderson & Bushman, 2002), affective and arousal changes lead to these increased instances of aggression in the short-term (e.g., Anderson, Anderson, & Deuser, 1996). Similarly, exposure to loud noises (particularly at above 80 decibels) have been linked to increased aggression (Donnerstein & Wilson, 1976; Dzhambov & Dimitrova, 2014; Geen, 1978; Geen & McCown, 1984). The effects of such exposure have largely been attributed to increases in

physiological arousal (Geen & McCown, 1984), leading to the increased likelihood of short-term aggressive behaviour.

1.3.14 Violent Media Exposure. There is a large body of evidence regarding the impact of media violence with respect to video games, movies and television, music, sports, and print media (e.g., Anderson et al., 2010; Brummert Lennings & Warburton, 2011; Huesmann, Moise-Titus, Podolski, & Eron, 2003; Stockdale, Coyne, Nelson, & Padilla-Walker, 2013; van der Meij et al., 2015; Warburton, Gilmour, & Lackzcowski, 2008). This evidence converges, across all research methodologies, to find links with short-term aggression; trait aggression; aggressive thoughts, feelings and arousal; and desensitisation to violence (e.g., Anderson et al., 2010; Anderson & Dill, 2000; Barlett et al., 2008; Bartholow & Anderson, 2002; Bartholow & Hummer, 2014; Donnerstein & Berkowitz 1981; Hummer, 2015; Krahé et al., 2012). More recently, violent media research has moved away from demonstrating such links towards finding the boundary conditions, and factors that facilitate these effects, or protect against them. The impact of media violence on aggression is now typically located within the context of other risk factors for aggression (Gentile & Bushman, 2012; Wiedeman, Black, Dolle, Finney, & Coker, 2015). This research consistently finds that although effect sizes are not large for this factor, media violence exposure is still a significant contributor in tandem with other risk factors for aggression, and is one of the few that can be dealt with by parents, professionals, and policy makers (Gentile, 2014; Huesmann & Taylor, 2006).

1.4 Plotting Risk Factors

Using the rules of thumb already noted, these risk factors can be plotted along the internal-external axis. Because impulsivity is a temperamental risk factor with a strong genetic basis (Rothbart et al., 2001), it can be conceptualised as the most internal risk factor in this thesis. Risk factors that appear developmentally later than impulsivity, and are

progressively more external (e.g., primary psychopathy, and normative beliefs about aggression) can be plotted closer to the centre of the axis. Similarly, aversive environmental conditions (i.e., loud noises and hot temperatures) can be plotted as the most external variables examined here.

It may be the case that external risk factors may have the smallest impacts on aggression relative to internal risk factors (Ribeaud & Eisner, 2010), and it is possible that plotting potential risk factors against their degree of internality versus externality may make this more or less apparent. Figure 4 below plots the risk factors relevant to this study along this axis, according to the degree to which they are strongly rooted person vs externally distal to the person.



Figure 4. A preliminary illustration of how risk factors in this study can be plotted along the internal versus external axis.

1.5 The Present Studies

Two studies investigated the combined effects of multiple risk factors for aggression, underpinned by findings from the literature examining the effects of various risk factors already noted. Study one is largely exploratory, and the first the author knows of to examine a large and diverse range of internal and external variables together to determine their relative contribution to trait aggression, the extent to which they can be plotted along an axis of internality and externality, and the extent to which they cluster. Study two is the first the author knows of to test a cumulative risk approach to short-term instances of aggression,

whereby groups face an increasing number of risk factors for aggression and are then tested for aggression precursors and aggressive behaviour.

In study one, participants completed a survey measuring different risk factors for long-term aggression and their relationship to trait aggression as measured by the Aggression Questionnaire (Buss & Perry, 1992). The key aims were to see which risk factors tended to be stronger predictors, to see whether stronger predictors tended to cluster by type along the internal/external axis, and to see if risk factors tended to aggregate in the individual. In study two, cumulative risk was assessed with respect to short-term instances of aggression. Participants were allocated to one of four experimental conditions: no risk factor (non-violent video game condition), single risk factor (violent video game condition), two risk factor (violent video game, and heat condition), and three risk factor (violent video game, heat, and noise). They were then assessed for changes in activation in the three GAM routes (Anderson & Bushman, 2002) of affect, cognition, and arousal, and tested for aggressive behaviour.

1.6 Research Questions and Hypotheses

RQ 1: Which risk factors are most strongly linked with trait aggression?

RQ 2: Do the risk factors tend to aggregate within the individual?

RQ 3: Do stronger risk factors cluster by type, and along one part of the internal-external axis?

RQ 4: Does an accumulation of risk factors in the short-term cause a linear increase in the likelihood of aggression and its precursors?

H1: That internal compared to external risk factors will be more strongly correlated with long-term trait aggression, and its subcomponents of trait anger, verbal aggression, physical aggression, and hostility.

H2: That the strongest internal risk factors will tend to:

H2a: cluster by type;

H2b: cluster on the internal-external axis; and

H2c: aggregate within the individual.

H3: That participants exposed to a greater number of external risk factors in the short-term will behave the most aggressively, and that the level of aggression displayed will show a linear increase as the number of risk factors increases.

H4: That participants exposed to a greater number of external risk factors in the short-term will experience more activation of internal states linked with aggression with respect to hostility, negative affect, stress arousal, and physiological arousal; but a reduced perception of personal control. The extent of these changes is expected to increase in a linear fashion.

Study One

2. Method

2.1 Ethics Approval and Participants

The Macquarie University human sciences ethics committee approved this study (Ethics Reference: 5201500081). For study one, a total of 287 participants were recruited via Amazon Mechanical Turk (MTURK; an online ‘workforce’) to complete a survey in exchange for monetary remuneration (USD\$1 per 30 minutes; see Appendix A for advertisement). Of these signups, 47 were excluded as they either; failed to complete the survey, demonstrated response set bias, or failed attention check items. The final sample of 240 participants (106 males, 134 females; 77.9% Caucasian; mean age = 35.77, $SD = 11.55$) were all from the US. These participants came from diverse socioeconomic backgrounds with respect to education and income (12.5% completed high school, 5.4% completed a trade education programs, 2.5% obtained a diploma, 26.7% completed some university or college, 40.4% obtained a bachelor degree, and 12.5% completed a postgraduate degree; 22.5% earned less than \$25,000, 13.8% earned \$25,001 - \$35, 000, 17.5% earned \$35, 001 - \$50,

000, 23.8% earned \$50, 001 - \$ 75, 000, 11.2% earned \$75, 001 - \$100, 000, and 11.2% earned over \$100, 000).

2.2 Measures

All questionnaires appear in Appendix B, and were administered online via the Qualtrics survey tool. The presentation of each questionnaire was randomised, as was the order of items within each questionnaire. Moreover, attention check items that requested specific responses (e.g., “So we can be sure you are paying attention, please answer ‘agree’ to this item”) were embedded within each questionnaire, to improve response quality (Maniaci & Rogge, 2014). The full scale reliabilities for all questionnaires can be found in Table 1, Section 3.2.

2.2.1 Trait Aggression. The 29 item Aggression Questionnaire (AQ; Buss & Perry, 1992) assesses trait aggression. The AQ consists of four subscales; trait physical aggression (e.g., “If somebody hits me, I hit back”), trait verbal aggression (e.g., “My friends say that I’m somewhat argumentative”), trait anger (e.g., “I am an even tempered person (R)”), and trait hostility (e.g., “Other people always seem to get the breaks”). Responses were made according to a scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). Items for each subscale and the full scale are summed, with higher scores reflecting higher trait aggression. Buss and Perry (1992) reported good reliability for the full scale ($\alpha = .89$), and each subscale ranged from adequate to good ($\alpha = .72$ to $.85$).

2.2.2 Overt Narcissism. The 16 item Narcissistic Personality Inventory–16 (NPI-16; Ames, Rose, & Anderson, 2006) is a shortened version of the Narcissistic Personality Inventory (NPI), a measure of overt grandiose aspects to clinical narcissism (Raskin & Terry, 1988). Each item of this forced choice questionnaire required participants to choose one of two alternative responses (e.g., “I am an extraordinary person” OR “I am much like everybody else”). If the narcissistic response for an item was endorsed, participants scored 1

point, and if the non-narcissistic item was endorsed, participants scored 0. Scores are summed, with higher scores reflecting greater grandiose narcissistic qualities. The NPI-16 closely parallels the NPI which has been shown to be related to Narcissistic Personality Disorder, demonstrating strong predictive and criterion validity (Ames et al., 2006). The NPI-16 has also previously been found to be reliable ($\alpha = .72$; Ames et al., 2006).

2.2.3 Covert Narcissism. The 23 item Maladaptive Covert Narcissism Scale (MCNS; Cheek, Hendin, & Wink, 2013) measures covert narcissism, a personality style characterised by a sense of entitlement and superiority, and a proclivity towards hypersensitivity and vulnerability. It consists of the popularly used 10 item Hypersensitive Narcissism Scale (Hendin & Cheek, 1997), and an additional 13 items that have improved its reliability and validity (Cheek et al., 2013). Responses to items (e.g., “I resent others who have what I lack”) were made on a rating scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores are summed, with higher scores indicating a greater propensity for individuals to endorse vulnerable narcissistic tendencies. The MCNS has previously been found to be very reliable ($\alpha = .89$; Cheek et al., 2013).

2.2.4 Psychopathy. The 26 item Levenson Self-Report Psychopathy Scale (LPS; Levenson et al., 1995) measured psychopathy; a personality style characterised by pleasure-seeking with complete disregard for the welfare of others. There are two types of psychopathy measured by two separate subscales; callous-unemotional ‘primary’ psychopathy (e.g., “For me, what’s right is whatever I can get away with”), and anxious-impulsive ‘secondary’ psychopathy (e.g., “Before I do anything, I carefully consider the possible consequence (R)”). Responses were made on a scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Items are summed for each subscale, with higher scores reflecting a greater presence of primary and secondary psychopathic tendencies. The primary

($\alpha = .74$) and secondary ($\alpha = .68$) subscales have previously demonstrated good reliability (Coyne, Nelson, Graham-Kevan, Keister, & Grant, 2010).

2.2.5 Machiavellianism. The 20 item Mach-IV inventory (Christie & Geis, 1970) measures Machiavellianism, a personality style characterised by hostility and cynicism. Responses to items (e.g., “Anyone who completely trusts anyone else is asking for trouble”) were made on a rating scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores are summed, with higher scores reflecting greater Machiavellian inclinations. The Mach-IV has strong claims for construct validity and reliability ($\alpha = .74$; Paulhus & Williams, 2002).

2.2.6 Impulsivity. The 45 item UPPS Impulsive Behavior Scale (Whiteside & Lynam, 2001) was used as a measure of impulsivity, a temperamental aspect of personality related to low self-control and recklessness. The UPPS consists of four subscales; premeditation (e.g., “I have a reserved and cautious attitude toward life”), urgency (e.g., “I have trouble controlling my impulses”), sensation seeking (e.g., “I quite enjoy taking risks”), and perseverance (e.g., “I finish what I start”(R)). Responses to items are made on a rating scale ranging from 1 (*rarely/never*) to 4 (*almost always/always*). Scores are summed, with higher scores indicating a greater propensity to endorse reckless lifestyle choices. Evidence suggests that the UPPS is one of the best predictors of reckless behaviour, and that the full scale, and each subscale are reliable (α 's = .67 to .84; Sharma et al., 2013).

2.2.7 Normative Beliefs about Aggression. The 15 item Normative Beliefs about Aggression Scale (NOBAGS; Krahè & Möller, 2004) assesses the degree to which respondents view aggression to be a normative response to provocation. It consists of two subscales; normative beliefs about relational aggression (e.g., “To tell lies about other people is...”), and normative beliefs about physical aggression (e.g., “To hit another person the same as oneself is...”). Each statement allowed a response on a scale ranging from 1 (*not at all ok*) to 4 (*totally ok*). Scores are summed, with higher scores indicating greater endorsement of

aggressive behaviour as normative. Krahè and Möller (2004) reported good reliabilities of; $\alpha = .89$ for the full scale, $\alpha = .76$ for the relational aggression subscale, and $\alpha = .86$ for the physical aggression subscale.

2.2.8 Attitudes towards Violence. The 20 item Attitudes toward Violence Scale (ATVS; Lonsway & Fitzgerald, 1995) measures the degree to which agree with a range of statements about violent acts. It is a short form of the 47 item ATVS by Velicer, Huckel and Hansen (1989), that has been validated as a good measure of violent attitudes (Davidson & Canivez, 2012). Responses to items (e.g., “Violent crimes should be punished violently”) were made on a rating scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores are summed, with higher scores indicating greater approval for violence. The ATVS has previously been found to be reliable ($\alpha = .87$; Davidson & Canivez, 2012).

2.2.9 Cultures of Honour. The 16 item Honor Ideology for Manhood (HIM) scale (Barnes et al., 2012) measures endorsement for statements espousing masculine honour. It is based on research linking these beliefs with aggressive behaviour in individuals from honour cultures (e.g., D. Cohen & Nisbett, 1994), and has been validated as a measure of honour-based cultural scripts about violence and aggression (Barnes et al., 2012). Responses to items (e.g., “A real man will never back down from a fight”) were made on a rating scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Scores are summed, with higher scores indicating stronger endorsement of masculine honour beliefs. The HIM has been found to be very reliable ($\alpha = .92$; Barnes et al., 2012).

2.2.10 Early Maladaptive Schemas. The 75 item Young Schema Questionnaire-Short Form (YSQ-SF; Young, 1998) measures 15 different early maladaptive schemas, each of which has a signature pattern of dysfunctional thinking and feeling. These schemas can be classified into five domains; disconnection/rejection, impaired limits, impaired autonomy and performance, other-directedness, and over-vigilance and inhibition. Previous findings suggest

that the domains of disconnection/rejection, and impaired limits are the most strongly linked to aggression (e.g., Dozois et al., 2013; Tremblay & Dozois, 2009; Warburton & McIlwain, 2005), thus only these two clusters were used in this study. The disconnection/rejection domain consists of five schemas focusing on themes of; emotional deprivation (e.g., “For much of my life, I haven’t felt that I am special to someone”), abandonment (e.g., “I worry that people I feel close to will leave me or abandon me”), mistrust/abuse (e.g., “It is only a matter of time before someone betrays me”), social isolation (e.g., “I don’t belong; I’m a loner”), and defectiveness/shame (e.g., “I am unworthy of the love, attention and respect of others”). The impaired limits domain consists of two schemas focusing on; entitlement (e.g., “I feel that I shouldn’t have to follow the normal rules and conventions other people do”), and insufficient self-control (e.g., “I can’t seem to discipline myself to complete routine or boring tasks”). For full descriptions of other EMSs within their respective domains, see Appendix B. Responses to items were made on a rating scale ranging from 1 (*completely untrue of me*) to 6 (*describes me perfectly*). Scores are then summed separately for each domain, with higher scores reflecting greater endorsement of dysfunctional thoughts and feelings relating to themes of disconnection/rejection, and impaired limits respectively. Both domains have previously been found to be very reliable (α ’s = .98 and .93, respectively; Dozois et al., 2013).

2.2.11 Adult attachment. The 18 item Revised Adult Attachment Scale (AAS-R; N. L. Collins, 1996) measures three dimension of adult attachment; relationship closeness (e.g., “I find it relatively easy to get close to people”), relationship anxiety (e.g., “When I show my feelings for others, I’m afraid they will not feel the same about me”), and relationship dependency (e.g., “I find it relatively easy to get close to people” (R)). Responses to items are made on a rating scale ranging from 1 (*not at all characteristic of me*) to 5 (*very characteristic of me*). Scores for each subscale are obtained by averaging responses for items

corresponding to that scale, with higher mean scores indicating an experience of greater closeness, anxiety, and dependency in relationships. N. L. Collins (1996) has indicated that each subscale is a valid measure of the dimensions of attachment underlying secure, avoidant attachment, and anxious-ambivalent styles respectively. N. L. Collins also reports that each subscale is reliable, with Cronbach alphas of .77, .85, and .78, for the closeness, anxiety, and dependency subscales, respectively.

2.2.12 Mental Health. The 12 item General Health Questionnaire (GHQ-12; De Jesus Mari & Williams, 1985) measures current overall mental health. It is based on the larger 60 item General Health Questionnaire, with both questionnaires previously being found to be valid measures of mental health (Aydin & Uluşahin, 2001; Kihç et al., 1997). Responses to items (e.g., “Have you recently felt constantly under strain?”) are made on a scale ranging from 1 (*not at all*) to 4 (*much more than usual*). Scores are summed, with higher scores indicating poorer mental health. The GHQ-12 has previously been found to be reliable ($\alpha = .78$; Kihç et al., 1997).

2.2.13 Violent Media Exposure. A five item Violent Media Exposure Index (VME; Warburton, Gilmour, et al., 2008) measured violent media usage. These open ended questions required participants to estimate how much time they spent; playing violent video games (“Please give your best estimate: In an average week, how many hours would you spend playing video games which involve ‘shooting’ or ‘damaging’ opponents, or which contain aggressive or violent themes?”), listening to violent music (“Please give your best estimate: On average, how many hours per week would you listen to music which has a lyrical content in which people are hurt or killed, or which has aggressive or anti-social undertones or themes?”), watching violent movies and television (“Please give your best estimate: On average, how many hours per week would you watch movies and/or television programmes in which people are hurt or killed, or which contain aggressive or violent themes?”), reading

violent print media (“Please give your best estimate: In the past month, how many books or articles would you have read in which the characters were hurt or killed, or in which there were violent or aggressive undertones or themes?”), and watching violent sports (“Please give your best estimate: On average, how many hours per week would you watch televised sports that involve rough physical contact and/or aggressive behavior?”). These estimates were used as a continuous measure of violent media exposure for each type of media. The VME has been successfully used as a dosage measure of overall violent media exposure and has demonstrated adequate internal consistency (α 's = .77 and .81; Warburton, Gilmour et al., 2008). In the current study, only the individual items were used to provide a more fine-grained measure of violent media usage.

2.3 Procedure

MTURK workers elected to participate in this study. After reading an advertisement on the website giving a faux description of the study (see Appendix A), they were re-directed to a questionnaire on Qualtrics. Only US citizens accessed the study. Participants first completed a deceptive information and consent form, detailing that the aim of this study was to “examine the interaction between personality traits” (see Appendix C). They then answered demographic questions surrounding age, gender, cultural background, education, and household income. After completing these questions, they completed the AQ, NOBAGS, ATVS, HIM, YSQ-SF, LPS, Mach-IV, NPI-16, MCNS, UPPS, AAS-R, GHQ-12, and VME in randomised order. Finally, participants were given a debrief consent form detailing the true purposes of the study (see Appendix D), given the opportunity to leave any comments, and given the opportunity to withdraw consent (none asked for their data to be withdrawn).

3. Results

3.1 Statistical Analyses, Error Rate and Assumptions

Correlational analyses and backward elimination regressions were conducted. The correlations between trait aggression and its four subcomponents, and each risk factor served to identify which risk factors were the strongest. The intercorrelations between risk factors were used to demonstrate clustering. Backward elimination regressions were then used to identify the most significant predictors for trait aggression and its four components, and further demonstrate clustering. Backward elimination regression is a special type of regression that allows for one to reduce a regression model by eliminating predictor variables that are not significantly, or strongly, linked to the independent variable of interest (Field, 2013). For all analyses, the assumptions of normality, homoscedasticity, linearity and independence of observations were met, unless otherwise stated. The error rate was set to .05 for all correlations, and omnibus regression analyses, whilst all individual *t* tests within the regression analyses were Bonferroni adjusted (i.e., .05 was divided by the number of predictor variables in the full model).

3.2 Descriptive Statistics

Table 1 summarises the descriptive statistics and internal consistency scores for all outcome measures (trait aggression, anger, verbal aggression, and hostility) and risk factors, excluding gender, income and education (see section 2.1 for breakdown statistics). Some variables violated the assumption of normality (see Appendix E), but because correlations are robust to violations of normality when sample sizes are large (Field, 2013), untransformed analyses are reported. In addition, because internal consistencies were adequate to excellent, all measures were used in their respective analyses.

Table 1

Descriptive Statistics for All Outcome and Predictor Variables.

	<i>N</i>	Minimum	Maximum	Mean	<i>SD</i>	α
Trait Aggression	240	30	135	60.67	21.22	.94
Anger	240	6	32	13.18	6.20	.87
Verbal Aggression	240	5	25	12.55	4.26	.77
Physical Aggression	240	8	44	16.60	7.65	.88
Hostility	240	8	38	18.33	7.17	.85
Overt	240	0	16	3.71	3.49	.82
Covert	240	23	108	58.71	18.30	.94
Psych1	240	16	59	29.33	8.33	.90
Psych2	240	10	31	18.90	4.94	.81
Mach	240	26	86	53.32	10.96	.85
Impulsivity	240	74	149	108	12.78	.80
NOBAG	240	15	60	21.03	7.28	.94
ATV	240	15	91	42.50	16.23	.93
HIM	240	16	136	62.03	29.29	.95
EMS – D/R	240	25	134	61.64	27.12	.96
EMS - IL	240	10	53	25.41	8.78	.94
Close	240	1.17	5	3.43	0.95	.87
Anxious	240	1	5	2.46	1.08	.92
Depend	240	1	5	3.16	0.99	.87
Mental Health	240	12	35	23.86	4.44	.63
VVG	240	0	80	3.59	8.71	-
VM	240	0	50	2.45	6.92	-
VM/TV	240	0	30	4.30	4.94	-
VPM	239	0	100	5.38	11.26	-
VS	240	0	40	1.57	3.73	-

Note. Overt = Overt Narcissism. Covert = Covert Narcissism. Psych1 = Primary Psychopathy. Psych2 = Secondary psychopathy. Mach = Machiavellianism. NOBAG = Normative Beliefs about Aggression. ATV = Attitudes towards Violence. HIM = Honour and Ideology and Manhood. EMS – D/R = Early Maladaptive Schemas in the Disconnection/Rejection Domain. EMS - IL = Early Maladaptive Schemas in the Impaired Limits Domain. Close = Attachment Closeness. Anxious = Attachment Anxiety. Depend = Attachment Dependence. VVG = Hours spent playing violent video games. VM = Hours spent listening to violent music. VM/TV = Hours spent watching violent movies and television. VPM = Number of violent print media items consumed. VS = Hours spent watching violent sports.

One participant elected not to report the amount of time spent consuming violent print media.

3.3 Correlation Analyses

Table 2 displays the correlations between each predictor variable and overall scores on the AQ and its subcomponents of anger, verbal aggression, physical aggression, and hostility. Table 3 presents all intercorrelations between predictor variables. Pearson's r correlations are reported for all relations, except for those pertaining to gender. Because

gender is a dichotomous categorical variable, it is recommended to use point-biserial correlational analyses (Field, 2013), thus gender correlations were computed using this method. Point-biserial correlations are computed in the same way as Pearson's r coefficients, but a single dummy variable representing the variable of interest is entered into the model.

Table 2

Correlations between Predictors of Overall Trait Aggression and Anger, Verbal Aggression, Physical Aggression, and Hostility.

	Trait Aggression	Anger	Verbal Aggression	Physical Aggression	Hostility
Gender	.18*	.03	.12	.31**	.10
Education	-.16*	-.11	-.10	-.16*	-.15*
Income	-.16*	-.10	-.09	-.09	-.23**
Overt	.34**	.24**	.35**	.37**	.19**
Covert	.62**	.51**	.38**	.41**	.74**
Psych1	.48**	.30**	.33**	.47**	.48**
Psych2	.69**	.62**	.47**	.52**	.66**
Mach	.49**	.32**	.37**	.36**	.57**
Impulsivity	.36**	.28**	.28**	.38**	.26**
NOBAG	.51**	.38**	.37**	.49**	.45**
ATV	.27**	.21**	.10	.38**	.19**
HIM	.40**	.25**	.25**	.53**	.27**
EMS – D/R	.61**	.45**	.35**	.41**	.77**
EMS - IL	.55**	.44**	.44**	.41**	.56**
Close	-.33**	-.28**	-.20**	-.17**	-.42**
Anxious	.44**	.35**	.24**	.26**	.58**
Depend	-.46**	-.32**	-.33**	-.29**	-.59**
Mental Health	.41**	.37**	.23**	.31**	.42**
VVG	.12	.04	.07	.18**	.10
VM	.25**	.20**	.15*	.24**	.21**
VM/TV	.05	-.04	.05	.11	.02
VPM	.12	.09	.12	.09	.10
VS	.03	-.02	.01	.14*	-.06

Note. Overt = Overt Narcissism. Covert = Covert Narcissism. Psych1 = Primary Psychopathy. Psych2 = Secondary psychopathy. Mach = Machiavellianism. NOBAG = Normative Beliefs about Aggression. ATV = Attitudes towards Violence. HIM = Honour and Ideology and Manhood. EMS – D/R = Early Maladaptive Schemas in the Disconnection/Rejection Domain. EMS - IL = Early Maladaptive Schemas in the Impaired Limits Domain. Close = Attachment Closeness. Anxious = Attachment Anxiety. Depend = Attachment Dependence. VVG = Hours spent playing violent video games. VM = Hours spent listening to violent music. VM/TV = Hours spent watching violent movies and television. VPM = Number of violent print media items consumed. VS = Hours spent watching violent sports.

Values in bold font represent marginally significant correlations (p values up to .1).

* $p < .05$. ** $p < .01$

Table 3

Intercorrelations between All Predictors of Aggression.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
2.	-.01	-																				
3.	.03	.26**	-																			
4.	.14*	.01	.16*	-																		
5.	.01	-.12	.15*	.13	-																	
6.	.24**	-.02	.04	.45**	.46**	-																
7.	.09	-.07	-.16*	.18**	.63**	.60**	-															
8.	.13*	.03	-.01	.20**	.54**	.65**	.54**	-														
9.	.08	-.14*	-.01	.28**	.22**	.20**	.09	.06	-													
10.	.19**	-.03	-.01	.34**	.38**	.56**	.50**	.45**	.14*	-												
11.	.10	-.18**	.04	.25**	.24**	.39**	.29**	.25**	.19**	.34**	-											
12.	.31**	-.18**	.05	.31**	.27**	.38**	.26**	.24**	.29**	.18**	.53**	-										
13.	.11	-.02	-.26**	.10	.71**	.44**	.62**	.52**	.10	.34**	.17**	.15*	-									
14.	.09	-.07	-.04	.34**	.61**	.53**	.63**	.43**	.15*	.45**	.18**	.25**	.55**	-								
15.	-.06	-.14*	.13*	.03	-.48**	-.24**	-.44**	-.30**	.03	-.44**	-.10	-.12	-.57**	-.30**	-							
16.	.07	.04	-.16*	.02	.60**	.28**	-.53**	.33**	.01	.31**	.13*	.14*	.73**	.50**	-.54**	-						
17.	.00	-.05	.19**	-.06	-.60**	-.28**	-.50**	-.41**	-.08	-.20**	-.08	-.15*	-.66**	-.38**	.71**	-.60**	-					
18.	.06	-.05	-.07	.22**	.40**	.25**	.41**	.13*	.12	.27**	.15*	.09	.45**	.44**	-.22**	.39**	-.31**	-				
19.	.17*	-.15*	-.03	.06	.11	.22**	.13*	-.02	.06	.14*	.16*	.16**	.19**	.00	-.07	.15*	-.07	.13	-			
20.	.16*	-.10	-.05	.17**	.20**	.26**	.21**	.07	.23**	.09	.16*	.24**	.14*	.27*	-.05	.03	-.13	.10	.08	-		
21.	.10	-.09	.02	.10	.01	.09	.04	.02	.01	.00	.15*	.16*	-.04	.00	.02	-.04	.04	.06	.10	.16*	-	
22.	-.01	.01	-.10	.02	.03	.10	.02	.14*	.01	.62**	-.14*	-.05	.11	.06	-.08	-.09	-.06	.10	.03	.08	.17**	-
23.	.27**	-.09	.14*	.13*	-.12	.01	.01	-.07	.10	.05	.11	.19**	-.16*	-.06	.06	-.12	.13*	.03	-.02	.05	.39**	.01

Note. 1 = Gender. 2 = Education level. 3 = Income. 4 = Overt Narcissism. 5 = Covert Narcissism. 6 = Primary Psychopathy. 7 = Secondary psychopathy. 8 = Machiavellianism. 9 = Impulsivity. 10 = Normative Beliefs about Aggression. 11 = Attitudes towards Violence. 12 = Honour and Ideology and Manhood. 13 = Early Maladaptive Schemas in the Disconnection/Rejection Domain. 14 = Early Maladaptive Schemas in the Impaired Limits Domain. 15 = Attachment Closeness. 16 = Attachment Anxiety. 17 = Attachment Dependence. 18 = Current Mental Health. 19 = Hours spent playing violent video games. 20 = Hours spent listening to violent music. 21 = Hours spent watching violent movies and television. 22 = Number of violent print media items consumed. 23 = Hours spent watching violent sports. Values in bold font represent marginally significant correlations (p values up to .1). * $p < .05$ ** $p < .01$

The strongest relationships were between aggression and callous-unemotional personality characteristics like covert narcissism, and cognitive variables such as disconnection/rejection schemas. Gender, income, education, and measures of violent media exposure (except for violent music) demonstrated the weakest relationships with trait aggression and each of its four facets. These correlations were then used to select starter variables for the backward elimination regression analyses. Variables that were significantly or marginally significantly correlated, up to $p = .1$, were included in the relevant regression analysis for each dependent variable of interest. In addition the intercorrelations revealed that personality variables strongly correlated with one another, as did cognitive variables. This suggests that these factors may indeed cluster together.

3.4 Regression Analyses

Table 4 summarises the model reduction process for the analyses predicting overall trait aggression and its subcomponents of anger, verbal aggression, physical aggression, and hostility. The assumptions of normality, linearity, homoscedacity and independence were all met. Collinearity diagnostics revealed that no predictors entered into the model were redundant (all tolerance values were above .20, and no variance inflation factors were above 10; see Appendix F). Each backward elimination regression reduced to a final model containing the strongest predictors for overall trait aggression and each of its four subcomponents.

Because the correlations between each predictor and components of aggression in Table 2 determined which predictors would be included in each regression analysis, the Bonferroni corrected alpha rate was different for each analysis. Twenty one predictors were significantly, or marginally significantly, correlated with overall trait aggression and with physical aggression, thus the adjusted alpha was .0024 for these analyses. Eighteen predictors were correlated with hostility, and so the adjusted alpha for this regression was .0028.

Finally, both anger and verbal aggression correlated significantly, or marginally significantly, with 17 predictors and the alpha rate for these analyses was set at .0029. Whilst extremely stringent, these corrected alphas, helped to identify the most robust subset of predictors for aggression.

No R^2 change tests were significant, indicating that the final parsimonious model accounted for most of the variance. Only the initial full models, and the final reduced models are reported (see Appendix G for all intermediate model, and R^2 statistics). The final predictors for trait aggression and its subcomponents of anger, verbal aggression, physical aggression, and hostility were similar. Primary and secondary psychopathy, overt and covert narcissism, impulsivity, maladaptive schemas in the disconnection/rejection domain, and honour ideologies were the strongest and most significant predictors. Gender, income, education, measures of violent media exposure, Machiavellianism, attachment, attitudes towards violence, impaired limits schemas, and current mental health did not remain in the final models.

Table 4

Backward Elimination Regression Analyses Predicting Trait Aggression, Anger, Verbal Aggression, Physical Aggression, and Hostility.

	Trait Aggression Std. β (% R^2)	Anger Std. β (% R^2)	Verbal Aggression Std. β (% R^2)	Physical Aggression Std. β (% R^2)	Hostility Std. β (% R^2)
Initial Model	$R^2 = .71$	$R^2 = .52$	$R^2 = .40$	$R^2 = .58$	$R^2 = .75$
Gender	.04 (0.15)	-	.07 (0.37)	.12 (1.10)	-
Education	-.06 (0.27)	-.02 (0.04)	-	-.04 (0.14)	-.09 (0.59)
Income	-.01 (0.01)	-	-	-	-.01 (0.01)
Overt	.16 (1.49)*	.17 (1.85)	.24 (3.67)***	.11 (0.71)	.04 (0.10)
Covert	.09 (0.26)	.17 (1.02)	-.00 (0.00)	-.04 (0.05)	.22 (1.59)**
Psych1	-.21 (1.44)*	-.38 (4.93)***	-.28 (2.72)***	-.10 (0.34)	-.11 (0.40)
Psych2	.43 (6.55)*	.59 (13.03)***	.36 (4.62)***	.31 (3.53)*	.18 (1.12)**
Mach	.09 (0.30)	.09 (.034)	.15 (0.90)	.01 (0.01)	.16 (1.08)**
Impulsivity	.19 (2.86)*	.18 (2.67)***	.18 (2.43)	.18 (2.62)*	.11 (0.92)
NOBAG	.16 (1.42)*	.11 (0.64)	.09 (0.41)	.21 (2.46)*	.13 (0.88)
ATV	-.09 (0.48)	-.05 (0.18)	-	-.06 (0.18)	-.11 (0.72)
HIM	.17 (1.54)*	.07 (0.28)	.01 (0.01)	.31 (5.15)*	.07 (0.30)
EMS – D/R	.26 (1.74)*	.08 (0.17)	.04 (0.03)	.22 (1.21)	.40 (4.33)*
EMS – IL	-.01 (0.01)	-.08 (0.23)	.17 (1.30)	-.05 (0.10)	-.05 (0.12)
Close	.06 (0.17)	-.06 (0.15)	.06 (0.14)	.13 (0.71)	.08 (0.26)
Anxious	-.07 (0.18)	-.02 (0.02)	-.12 (0.56)	-.10 (0.38)	.00 (0.00)
Depend	-.05 (0.07)	.15 (0.77)	-.16 (0.85)	-.09 (0.29)	-.09 (0.27)
Mental Health	.04 (0.13)	.09 (0.56)	-.05 (0.14)	.05 (0.144)	.04 (0.12)
VVG	-.04 (0.12)	-	-	-.00 (0.00)	-
VM	.04 (0.12)	.07 (0.35)	-.03 (0.08)	.05 (0.18)	.05 (0.19)
VM/TV	-	-	-	.03 (0.08)	-
VPM	.06 (0.26)	-	.10 (0.98)	-	-
VS	-	-	-	.01 (0.01)	-

	Trait Aggression Std. β ($\%R^2$)	Anger Std. β ($\%R^2$)	Verbal Aggression Std. β ($\%R^2$)	Physical Aggression Std. β ($\%R^2$)	Hostility Std. β ($\%R^2$)
Final Model	$R^2 = .65$ ($\Delta R^2 = .07$)	$R^2 = .50$ ($\Delta R^2 = .03$)	$R^2 = .33$ ($\Delta R^2 = .08$)	$R^2 = .52$ ($\Delta R^2 = .06$)	$R^2 = .71$ ($\Delta R^2 = .04$)
Overt	.17 (2.67)*	.18 (2.46)***	.24 (4.93)***	-	-
Covert	-	.19 (2.04)***	-	-	.28 (3.17)**
Psych1	-	-.29 (4.16)***	-	-	-
Psych2	.46 (12.82)*	.62 (18.15)***	.42 (16.73)***	.32 (7.45)*	.21 (2.43)**
Impulsivity	.24 (5.11)*	.20 (3.39)***	.17 (2.67)***	.23 (4.84)*	.14 (1.72)**
NOBAG	-	-	-	.20 (2.82)*	-
HIM	-	-	-	.32 (8.64)*	-
EMS – D/R	.29 (5.11)*	-	-	-	.43 (8.12)**

Note. Std. β = Standardised beta values for each predictor. R^2 = The amount of variance explained by a model. $\%R^2$ = The unique amount of variance explained by a predictor, obtained by squaring part correlation values. Percentages are reported to two decimal places, due to the small amount of variance some explain. ΔR^2 = The change in the amount of variance explained between the initial and final models.

Overt = Overt Narcissism. Covert = Covert Narcissism. Psych1 = Primary Psychopathy. Psych2 = Secondary psychopathy. Mach = Machiavellianism. NOBAG = Normative Beliefs about Aggression. ATV = Attitudes towards Violence. HIM = Honour and Ideology and Manhood. EMS – D/R = Early Maladaptive Schemas in the Disconnection/Rejection Domain. EMS - IL = Early Maladaptive Schemas in the Impaired Limits Domain. Close = Attachment Closeness. Anxious = Attachment Anxiety. Depend = Attachment Dependence. VVG = Hours spent playing violent video games. VM = Hours spent listening to violent music. VM/TV = Hours spent watching violent movies and television. VPM = Number of violent print media items consumed. VS = Hours spent watching violent sports.

Values in bold font represent marginally significant regression coefficients (p values up to .05).

* $p < .0024$. ** $p < .0028$. *** $p < .0029$.

4. Discussion

The aim of study one was to examine the relationship between various predictors of trait aggression, and its components of anger, verbal aggression, physical aggression, and hostility. This was to ascertain whether risk factors for aggression tend to cluster within the individual and to identify which risk factors are the strongest, most robust predictors of trait aggression and its subcomponents. Analysis of the subcomponents of trait aggression was important, as some risk factors may have related more strongly to one or two subcomponents but not to overall aggression. For example, some risk factors may relate more strongly to the emotional component of anger, as opposed to the more cognitive or behavioural components of hostility, verbal aggression, and physical aggression.

4.1 Hypothesis 1: Internal Versus External Risk Factor Strength

When all risk factors were considered, the findings largely supported the hypothesis that internal compared to external risk factors would be more strongly correlated with trait aggression, or at least one of its subcomponents. The data showed that almost all risk factors (whether internal or external) correlated with overall trait aggression, or with at least one subcomponent. Interestingly, external risk factors (i.e., income, education, and all violent media exposure indices, except for print media) were most related to physical aggression and hostility, but weakly so. In contrast, the internal risk factors (i.e., all personality measures, dimensions of attachment style, all cognitive script and schema measures, and mental health, but not gender) tended to be significantly, and very strongly, related to all components of aggression. The fact that gender demonstrated a weaker pattern of correlations than other internal risk factors is noteworthy. Past literature shows that whilst gender predicts to aggression, it most strongly relates to physical aggression (Archer, 2004; Bettencourt & Miller, 1996), as was the case in the current study. It may be that gender differences overall were not present in the current sample. On the whole, the findings indicate that some risk

factors are more strongly related to long-term trait aggression than others, with internal factors seemingly demonstrating stronger links, in terms of effect size, with a greater number of subcomponents of aggression than external risk factors.

The weakest predictors were violent movie and television exposure, and violent print media exposure. As with previous findings (e.g., Huesmann et al., 2003), the correlations were positive, but the size of the effect in this sample was clearly smaller than that found in past meta-analyses (e.g., Anderson & Bushman, 2001). It should be noted that violent music exposure had consistently significant links with each component of aggression, as well as overall trait aggression, and that the correlation between violent video game and physical aggression was significant. The former result is consistent with those of Warburton, Gilmour, and Lackzcowski (2008), and the size of the latter effect is consistent with that found in the large meta-analysis by Anderson and colleagues (2010). The finding regarding violent print media adds to the scant findings in this area (e.g., Stockdale et al., 2013), with this type of violent media being positively linked with aggression, albeit only marginally significantly so.

The finding of a robust link between trait aggression and; EMSs in the disconnection/rejection, and impaired limits domains accords with previous findings (e.g., Tremblay & Dozois, 2009; Warburton & McIlwain, 2005), as does the robust link with covert narcissism (e.g., Fossati et al., 2010; Warburton, Edwards, et al., 2008). There are few such findings, so this evidence adds to the scant literature that tends to demonstrate such effects. This study was also consistent with past findings linking overt narcissism, both types of psychopathy, and Machiavellianism to trait aggression (e.g., Bettencourt et al., 2006; Jones & Neira, 2015). Interestingly, past research has indicated that EMSs are also associated with aggressive personality disturbances (e.g., borderline traits, psychopathy, narcissism, and Machiavellianism; Chakhssi et al., 2014; Jovev & Jackson, 2004; Láng & Birkás, 2014; Zeigler-Hill et al., 2011), so it is possible that the core beliefs underlying these callous-

unemotional traits may contribute to links between EMSs and aggression. Future research may thus benefit from longitudinally testing schema mediation. Finally, the links between dimensions of attachment, impulsivity, and indicators of SES (i.e., income and education) with trait aggression also replicated past findings (e.g., Fournier et al., 2011; Stouthamer-Loeber et al., 2002; Vigil-Colet & Codorniu-Raga, 2004).

The pattern of observed correlations when mapped along an axis ranging from external to internal is instructive, with internal factors (e.g., covert narcissism) having stronger links, and external factors (e.g., violent media exposure) having weaker links to long-term trait aggression. This supports previous research indicating that internal risk factors have stronger impacts on aggression than external risk factors (Ribeaud & Eisner, 2010). It may be the case that, as posited in this thesis, internal risk factors have bigger effects because they are rooted in the individual, and therefore have more enduring impacts on trait aggression.

On the whole, the findings give further credence to the claim that aggression is multi-causal and fits well with the GAM (Anderson & Bushman, 2002) and GLM (Buckley & Anderson, 2006), which posits that internal ‘person’ factors (e.g., covert narcissism) interact with external situational factors (e.g., violent music exposure) in instances of aggression, with these processes feeding into the development of long-term trait aggression. In terms of the accumulation of risk factors for aggression, it should be noted that even weaker risk factors may still be important contributors to aggression, as small effects can have a large social impact. This is because risk factors can cluster together to have significantly larger impacts on aggressive outcomes, with weak factors potentially acting as tipping points for aggression (Gentile, 2014; Huesmann & Taylor, 2003). It is important to note though that this was a correlational analysis, and claims regarding causality cannot be made. Thus, these findings need corroborative evidence from experimental research.

4.2 Hypothesis 2: Clustering and Aggregation

To ascertain the strongest predictors of trait aggression in the presence of other predictors, and the extent to which types of factors clustered, backward elimination regression analyses were conducted. This analysis had similar outcomes to the previous correlational analyses, with internal risk factors being the strongest predictors. This is to be expected as the same data were used. However, it is noteworthy that only internal risk factors remain in the final models. Thus, these findings further support the hypothesis that internal risk factors would be more strongly related to trait aggression than external risk factors.

There was also support for hypothesis two; that the strongest risk factors for aggression (which, as indicated by the previous analysis, were situated within the person) would cluster by type, cluster on the internal-external axis, and aggregate within the individual. That is, risk factors will form categories which would be consistently intercorrelated, and be robust predictors of trait aggression. The intercorrelational analyses between internal risk factors in particular demonstrated that risk factors tended to cluster by type. The clusters were: temperament, personality, and mental health (e.g., impulsivity, and covert narcissism); and early childhood attachments, scripts and schemas (e.g., normative beliefs about aggression and EMSs). This demonstrates that more genetically linked personality and temperament variables tended to cluster, whilst more cognitive styles of thinking independently clustered with each other. This is consistent with past literature that demonstrates that temperament is related to callous personality styles, and that callous personalities are linked with mental health disorders (e.g., Levenson et al., 1995; Schaeffer et al., 2003). It also links with research showing that EMSs occur in early childhood when one is developing attachment, and that these types of attachments and EMSs endure to adulthood (Hazan & Shaver, 1987; Young et al., 2003).

Despite the fact that risk factors clearly clustered by type, temperament, callous personalities, and internal schemas showed a consistent pattern of strong correlations with one another across the board. This aligns with previous research demonstrating that cognitive styles of thinking, and personality styles are strongly related, and in particular highlights the link between EMSs and callous personality disturbances (e.g., Chakhssi et al., 2014). These intercorrelations also highlight that the likelihood of possessing one risk factor is associated with the increased risk of possessing other risk factors. Taken together, the findings thus indicated that risk factors clustered along the internal-external axis, with internal risk factors in particular strongly correlating with one another, which is consistent with previous cumulative risk research (Ribeaud & Eisner, 2010).

These findings were further reinforced by the backward elimination analyses. Risk factors within the personality and cognitive types of clusters remained in the final analyses. In particular, temperament and personality variables such as secondary psychopathy and impulsivity consistently positively predicted all facets of aggression in the final models. This is consistent with research showing that both psychopathy (e.g., Jones & Paulhus, 2010), and impulsivity (e.g., Sharma et al., 2013) predict aggression. Other factors including primary psychopathy, overt and covert narcissism, maladaptive schemas in the disconnection/rejection domain, honour ideologies, and normative beliefs about aggression also strongly predicted aggression, which is consistent with past research (Bettencourt et al., 2006; D. Cohen & Nisbett, 1994; Dozois et al., 2013; Huesmann & Guerra, 1997; Jones & Neria, 2015; Okada, 2010). These findings highlighted that risk factors may indeed aggregate within the individual, as the remaining predictors in the model, coupled with the large effect sizes observed in the intercorrelational analyses indicate that these risk factors are robust, overlap, and likely co-occur within the individual.

Interestingly, the largest amount of variance explained was shared between the classes of callous-unemotional personality variables, and cognitive variables in all five regression analyses. This is consistent with the GAM (Anderson & Bushman, 2002), and GLM (Buckley & Anderson, 2006), which note that these types of risk factors in particular, because they all involve the development of aggressive ways of thinking, are the type of ‘person’ factors most likely to contribute to trait aggression. Given that in this sample risk factors tended to cluster in the individual, there was likely a subgroup of participants who had a greater likelihood of developing long-term trait aggression than others. This is consistent with previous research, which indicates that a greater number of risk factors leads to a greater likelihood of engaging in long-term aggressive misconduct (e.g., Farrington, 2000; Loeber & Hay, 1997). It is also worth noting that impulsivity and secondary psychopathy were the most robust predictors, as they were the only two predictors of overall aggression and each of its subcomponents. This provides support for an axis approach towards internality versus externality, as these can be placed as the most strongly rooted risk factors. Cognitive variables were slightly weaker, which is indicative of the fact that they are less deeply rooted in the individual and therefore may not predict aggression as strongly as those more deeply rooted.

4.3 Strengths and Weaknesses

The major strength of this study lies in the testing of a large number of risk factors for aggression in the presence of each other. It drew upon a broad range of variables that have been well established as risk factors for aggression in previous literature (e.g., psychopathy, narcissism, and Machiavellianism; Jones & Neria, 2015).

Whilst it was beyond the scope of this thesis to examine all possible risk factors associated with aggression, the lack of measures representing the influence of family, peers, schools, and the broader community should be noted. Furthermore, the deceptive cover story given to participants would have also contributed to the reliability of the findings, as this

decreased the likelihood of participants giving false responses. Nonetheless, as with all correlation, cross-sectional between-subjects studies, there are limitations to the inferences that can be drawn from the data, most notably in terms of causality. However, the findings should be considered in the context of past theory and research (e.g., findings showing strong causal links between violent media exposure and aggression; Anderson & Bushman, 2001).

There may also be concerns surrounding self-report bias, as participants may lack self-insight into their true capabilities and personality characteristics. Although care was taken to reduce problems of bias by embedding attention check items into each questionnaire, this issue may still have potentially influenced the outcomes of this study. Another potential concern for this study is that the sample size may have been too small given the large number of predictors used in this study and as such, the strength and significance of the effects of some predictors used in this study may have been underestimated. It should also be noted that other measures such as impulsivity and callous personality types could have been adopted, as they may more appropriately tap into the risk factors that in this study were most strongly associated with aggression. Nonetheless, the measures used in the present study were reliable and had demonstrated validity, and provide important insights into the roles of these risk factors in increasing the likelihood of aggression in the long-term.

Another lingering question from this research is whether or not some of the external risk factors tested mediate the links found between the internal risk factors and aggression. Because violent media exposure has been linked to long-term aggression by increasing acceptance of aggressive norms (Möller & Krahé, 2008), this may be worth investigating longitudinally, in the context of a cumulative risk model. It may be that whilst more internally situated risk factors for aggression have stronger *direct* effects on trait aggression, less internally situated, and externally located risk factors have stronger *indirect* effects on trait aggression, and that this depends on the extent to which the internal routes outlined in the

GAM (Anderson & Bushman, 2002) are activated. It is unclear from these findings whether this is the case, and future research could demonstrate this possibility. Finally, because backward eliminations regressions are data driven as opposed to theory driven (Field, 2013) these results can be considered as primarily exploratory. It was theoretically unclear which individual predictors would serve to be the strongest, and as a result theory driven hierarchical regressions could not be conducted. Whilst the pattern of results indicated that internal risk factors were stronger predictors of aggression than external risk factors, future confirmatory analyses should be conducted to demonstrate this link more definitively.

Despite these limitations, the results demonstrated that whilst multiple risk factors can influence aggression, some risk factors more strongly predict aggression than others. The more internally situated these risk factors were, the more predictive they were of aggression. However, this study only examined risk factors with distal impacts on long-term trait aggression, and proximal risk factors may have important causal impacts on short-term instances of aggression. Particularly, it may be that the effects of external risk factors are more apparent when examining their proximal effects on short-term instances of aggression, and an experimental design may better capture this. In addition, some external risks (such as heat and noise) cannot be assessed by administering questionnaires. Thus, the second study aimed to experimentally examine the cumulative effects of external risk factors on proximal, short-term instances of aggression. It aimed to show that as the number of risk factors participants were exposed to increased, the likelihood of short-term aggression also increased.

Study Two

5. Method

5.1 Participants and Design

Eighty two participants signed up to participate in study two. Of these, six were excluded from all analyses as they either guessed the experiment, or did not follow the

instructions given. The final sample of 76 participants (39 females, 37 males, Mean age = 19.87, SD = 3.78) were Macquarie University first year psychology students, who participated in exchange for course credit. Participants were allocated to one of four groups. They either played; a neutral version of a purpose-designed video game (no risk factor group; $n=18$), a violent version of the same game (single risk factor group; $n=18$), the violent game in a room heated up to be 35 degrees Celsius (two risk factor group; $n=20$), or the violent game in a room heated up to be 35 degrees Celsius with loud construction noises playing through their headphones at 85-90 Decibels (three risk factor group; $n=20$). Because it took an hour to heat the room up to 35 degrees Celsius, the room was kept at this temperature for the entire day. Thus random allocation was achieved by allocating whatever number of participants had signed up for that day to either the two or three risk factor groups, within gender (to avoid gender effects). On alternate days, when no heating was required, participants were randomly allocated within gender to either the no or single risk factor conditions. Allocations within gender were made because previous literature has indicated that gender can influence aggression (Archer, 2000, 2004), and has also been shown to moderate the effect of violent video games on aggression (Bartholow & Anderson, 2002).

It is worth noting that because of restrictions on recruiting participants for this experiment, a larger sample size could not be obtained. It is likely that a total of 76 participants would not be enough for the statistical analyses to reach statistical significance at the .05 level. As such a power analysis using the program G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was conducted. It revealed that in order to obtain a moderate effect size, with power set at a minimum of .8 (as recommended by J. Cohen, 1990) a minimum sample size of 179 participants is required. Thus the statistical analyses in this study may fail to find a true effect significant, a fact that should be taken into account when interpreting the findings.

5.2 Stimuli

5.2.1 Video Games. Participants played a custom-altered version of Minecraft (version 1.6.39) by Mojang. Minecraft was specifically chosen because it is extremely customisable and easy to play. Thus participants with no video gaming experience could learn to play quickly. Developed in collaboration with Daniel Bishara, an associate who has experience customising Minecraft, a pre-existing map (see Appendix H for screenshot) was chosen as the playing field. The map was a two storey mansion, with multiple rooms that participants could explore in order to achieve one of two objectives. Participants either had to hunt for treasure, or fight hostile creatures to collect as many game points as possible. The game conditions were designed so that play would last for 10 minutes on average, and so that all players would complete as similar a number of game tasks as possible. The game allowed no crossover, such that participants forced to fight hostile creatures could not hunt for any treasure, and vice versa (see Appendix I for screenshots). Participants were only notified of the objective of their game condition once play had begun, with notification appearing immediately on a sign built into the map. In addition, a purpose built tutorial was designed that allowed participants to learn a) learn the game controls, and b) the two different objectives they could potentially be required to achieve (i.e., either hunt for treasure, or fight hostile creatures), which c) reinforced the cover story by teaching them a faux point system (see Appendix J for screenshots).

5.2.2 Noises. The researcher created the construction noises by combining multiple sound clips that involved the use of construction tools. These were sourced from www.sounddogs.com, a sound effects website with downloadable clips featuring a wide variety of sounds. These range from airport noises, to rainforest sounds. The clips used in this stimulus featured drills, jackhammers, sanders, and chainsaws that were put together to mimic a naturalistic construction site, such that intermittent bursts of higher intensity construction noises featuring a single tool (e.g., a chainsaw) erupted atop a lower intensity

baseline of general construction sounds. As a result, sound intensities ranged from 85 Decibels (for the lower intensity general noise baseline) to 90 Decibels (for the higher intensity individual tool bursts; as measured by a sound meter app, Decibel 10th by Skypa held at the headphone speakers). The full clip was 10 minutes long, and was played through SoundTrue speakers, by Bose.

5.2.3 Heat. To manipulate room temperature, two Dimplex 1.5 kilowatt oil heaters and a third Dyson AM05 hot/cool fan heater were used. These heaters kept the experiment room at a stable temperature of 35 degrees Celsius. The room was insulated, all windows and vents were covered with weather blocking material, and door draught stoppers were placed at all entrances to the room. To ensure temperature stability, a thermometer monitored any temperature fluctuations, so that heating adjustments could be made. The heaters were also hidden from view (to reduce suspicion) by a fire-retardant screen. On days when participants were not allocated to any heat conditions, the Dyson and the buildings pre-existing cooling system were used to keep the temperature at 23 degrees Celsius. This was also monitored by a thermometer. The experimenter monitored participants at all times, and provided water to minimise any adverse health risks. To keep procedural consistency, the researcher also remained in the room when participants were not allocated to hot room conditions.

5.3 Measures and Apparatus

The questionnaire used in this study appears in Appendix K. The questionnaire was administered online via the Qualtrics survey tool, at two time points. As in study one, the presentation of items within the questionnaire was randomised.

5.3.1 Aggressive Behaviour. The Hot Sauce Paradigm (Lieberman, Solomon, Greenberg, & McGregor, 1999; Warburton, Williams, & Cairns, 2006) was used to measure aggression. Participants are required to package a hot and spicy food sample for another (faux) participant, who is known to have a strong aversion for hot and spicy foods (as

indicated by a false ‘taste preferences inventory’). Participants are also made aware that the faux participant will have to consume the entire amount they package. In addition, participants are asked to taste the hot sauce and thus, become aware that allocating hot sauce to someone who dislikes spicy foods will cause some level of harm or discomfort. Aggression scores are obtained by weighing the amount of hot sauce packaged, with greater amounts of hot sauce allocated representing more aggression. Prior research has established the validity of this approach as a measure of proximal intent to hurt another (Lieberman et al., 1999; Ritter & Eslea, 2005).

5.3.2 Manipulation Check. To determine that the hot sauce measure was an effective measure of aggression, participants were administered four manipulation check items (Lieberman et al., 1999). To ensure that participants found the sauce to be hot, one item (“Please circle the number on the scale below which best indicated how ‘hot’ you found the ‘hot and spicy sauce’ to be”) rated on a 9-point scale was presented. Additionally, a further three items verifying that participants took the faux participants food preferences into account (“To what extent did you use the Taste Preferences Inventory when giving out the food sample to the other person?”), found the food preferences information useful (“How useful do you think the Taste Preferences Inventory was when giving out the food sample?”), and knew that the faux participant disliked spicy foods (“Using the scale below, indicate the extent to which the person you gave the food sample liked that kind of food.”) were also presented. These three items were all rated according to a 21-point scale.

5.3.3 Internal State. The 31 item Feelings Checklist (Warburton et al., 2006) was used to measure changes to the key internal states linked with aggression in the GAM (i.e., activated cognitions, affects, and levels of physiological arousal; Anderson & Bushman, 2002). The scale consists of 31 items that are rated along a 7-point bipolar scale, measuring five separate subscales: hostility (activated hostile cognitions), mood (negative affect), stress

arousal (stress-related feelings), physiological arousal, and feelings of control (control-related cognitions). Nine items measured hostility (e.g., “trusting-untrusting”), 12 measured mood (e.g., “happy–sad”), five measured physiological arousal (e.g., “inactive-active”), and five measured feelings of control (e.g., “ineffectual-effectual”). Additionally, five affect items were reverse scored to form the measure of stress arousal (e.g., “bothered-untroubled”). Scores were summed for each scale, with higher scores indicating more positive mood, and higher levels of hostility, stress, physiological arousal, and perceived control. Because this questionnaire was administered at two time points, time two scores were subtracted from time one scores to give a measure of state change in these five areas. Thus positive scores indicated an increase, and negative scores indicated a decrease in these internal states (for example, a positive mood score would indicate an improvement of mood post-manipulation, whilst a negative mood score would indicate a worsening of mood). Cronbach’s alphas for these measures at both time points indicated good reliability: hostility ($\alpha = .72$ and $.91$), mood ($\alpha = .88$ and $.95$), stress arousal ($\alpha = .77$ and $.86$), physiological arousal ($\alpha = .77$ and $.91$), and perceived control ($\alpha = .69$ and $.85$). These reliability outcomes align with previous research indicating that these scales are very reliable (Warburton et al., 2006).

5.4 Procedure

The full procedure can be seen in Figure 5, and is explained in full below.

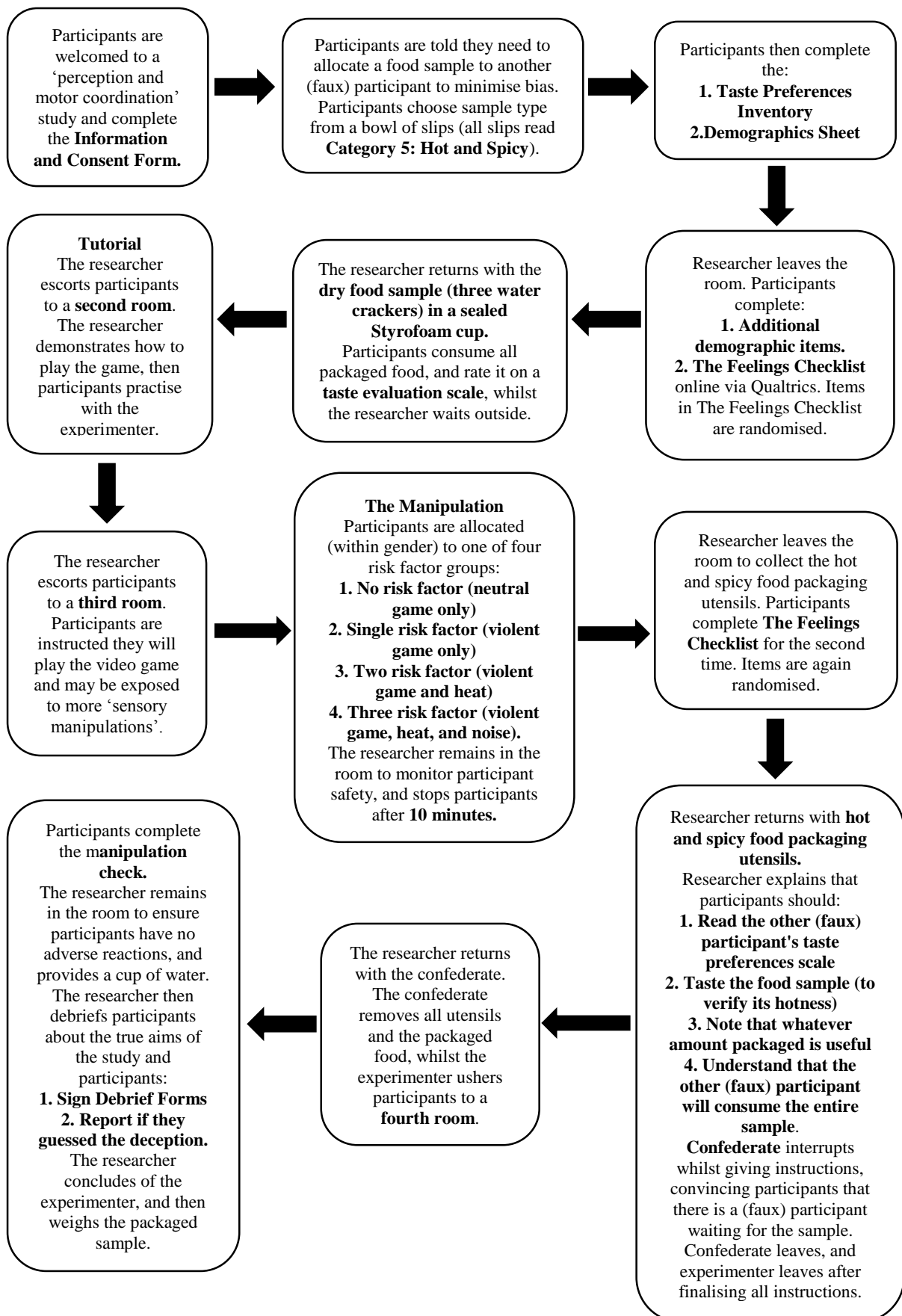


Figure 3. The first step of the experiment is noted in the top left hand box. The black arrows can be followed to the final step in the bottom left hand corner.

Using the online Macquarie University SONA system, participants signed up for a study called ‘Perception and Motor Coordination’. Upon arrival at the laboratory, participants were invited to read and sign the (faux) information and consent forms (see Appendix L). As part of the cover story, participants were informed that they would answer some questionnaires, have some of their senses ‘manipulated’, and play a video game. They were further informed that this experiment would test how manipulations to various senses, including taste, sound, and temperature, could influence motor coordination as assessed by video game play. Participants were then led to believe that their sense of taste would definitely be manipulated, and also led to believe that their participation timeslot overlapped with that of another (faux) participant. It was explained that this was because the other participant would be packaging the food sample they would be consuming, as this would keep the experimenter blind to the type of taste, reducing experimental bias. They were then informed that the next (faux) participants’ timeslot overlapped with theirs, and that this was so that they, in turn, could package a food sample for this person (none refused).

To reduce suspicion, participants were also informed that another researcher was also working on this experiment and they would run the upcoming participant through the experiment (in reality, this second researcher was a confederate). To determine what food sample would be packaged, participants were then asked if they were willing to package a food sample for the next participant (all agreed) and then were asked to pick a folded slip of paper out of a bowl ‘at random’. This would inform participants, who in turn ‘informed’ the experimenter, of the kind of food they would be packaging for the other participant (in reality, all slips read ‘Category 5: Hot and Spicy’). Once participants knew of the food sample they would be packaging, they completed a demographics sheet and a taste preferences inventory that also noted any allergies (see Appendix M for all hot sauce paradigm forms). They were told that these would be given to the other (faux) participant, so

they could check for allergies, and take into account their preferences when allocating their food sample (in reality, it was standard procedure for participants to receive three plain water crackers). Allergy checks were used to ensure that no participant was allocated a food sample they could not consume.

Participants were then left to complete an online questionnaire consisting of some more demographics items and the Feelings Checklist. The researcher then returned with their 'randomly assigned food sample' (three dry water crackers in a Styrofoam cup covered by a lid). Participants were instructed to consume the entire food sample and fill out a taste evaluation scale, but that they were not to start eating until the experimenter left the room so that the experimenter remained blind to the food sample being consumed. After consuming the crackers and completing a taste evaluation inventory, participants were then taken to another room where the tutorial video game was set up. The experimenter first demonstrated how to go through the tutorial for the participants, highlighting what controls allowed participants to walk, turn, jump, open chest, and fight creatures. Opportunities to collect treasure and fight creatures were embedded in the tutorial, so participants could practise these skills. The experimenter also pointed out that participants would either fight creatures, or hunt for treasure (but never do both). Participants were also told there was a point system in play, and that regardless of what game condition participants were assigned to they should aim to collect as many points as possible. Finally, the experimenter showed participants how to reset the game if they were killed by a hostile creature, and informed participants that being killed would not result in a loss of points collected. Under the supervision of the experimenter, participants were then given the chance to play through the tutorial themselves, experiencing a small amount of both neutral and violent game play, until they felt comfortable enough with the controls.

Once complete, the experimenter ushered participants to a third room, where the experiment proper would occur. Once in the room, participants were instructed to place a set of headphones on over their ears, and then played their allocated video game for 10 minutes. If they were in the three risk factor group, the construction noises were played through the headphones, otherwise only game sounds were heard. Volumes and sound intensities were checked before each session and kept constant for each participant.

After 10 minutes passed, participants completed the Feelings Checklist a second time while the experimenter left to collect the tray holding the hot and spicy food packaging materials. This included the faux participants' taste preferences inventory in an envelope, which indicated that they severely disliked hot and spicy foods by stating that they rated their liking for hot and spicy foods as a 3 out of 21 (see Appendix M), a bowl of hot sauce, a Styrofoam cup and lid, a spoon, a paddlepop stick (to taste the sample with), a napkin, a pen, and an instruction sheet (see Appendix M). The experimenter then said:

"This is the hot and spicy food sample. There is an instruction sheet here for you to follow, so follow it step by step. But basically, what you need to do is read the other persons preferences, have a small taste of the sample, and then package some of the food from the bowl into the cup. Any amount is useful and you can put as much or as little as you like, and the other person will have to eat everything that's in there. Just knock on the door when you're finished and I will come back in."

Whilst explaining this, a confederate knocked on the door to interrupt by saying, "We're ready in the other room now." This helped to convince participants that there was in fact another person who would receive the food they packaged. The experimenter replied with "Ok good, we're nearly ready." Then participants were left to package the food sample, and when finished the confederate entered and took the packaged sample whilst the experimenter ushered the participant into an adjoining fourth room. Here, participants were given some water as a safety precaution after exposure to the heat, and given some manipulation checks, which also assessed frustration, to complete. Finally, participants were asked what they thought the true aims of the experiment were, and then debriefed in full

about the true aims of the study. They were then asked to re-consent to the study by signing debrief forms (all re-consented), and were given an additional information sheet detailing the aims of study one and two, in full (see Appendix N). Participants were then thanked, and allowed to leave. The packaged sample was then weighed on a digital scale, with weights (adjusted for that of the cup) given in one gram increments. Completion of this experiment took between 45 minutes to an hour.

6. Results

6.1 Design, Statistical Analyses, Error Rate and Assumptions

A series of Analyses of Covariance (ANCOVAs) were run. These tested the effects of short-term exposure to multiple risk factors for aggression on aggressive behaviour, frustration, hostility, mood, feelings of control, stress arousal, and physiological arousal. The assumptions of normality, linearity, homogeneity of variance, and homogeneity of regression slopes were met, unless otherwise stated. The error rate was set to .05 for all analyses, and all follow-up planned contrasts (three per analysis) had a Bonferroni adjusted error rate of .017.

It is worth noting that limitations in the number of participants available resulted in group sizes that produced low power in some analyses, most notably in the planned contrasts. Power estimates for these contrasts ranged between .05 and .81, indicating that the single most powerful test only just met the accepted cut-off of .8 (J. Cohen, 1990; see sections 6.4 - 6.6 for $1-\beta$ power estimates). Therefore, it is possible that some of the null results obtained were due to type II error. That is, it may be the case that true effects did exist in this population, but that these analyses were not sensitive enough to detect them due to low power. Indeed, some non-significant test effect sizes were large, suggesting that these results may be practically and theoretically meaningful, despite being non-significant.

6.2 Manipulation Checks

To confirm that the video game, room temperature, and noise manipulation were successful some questionnaires were administered.

6.2.1 Video Game. Participants rated on a scale ranging from 1 to 21 how boring ($M = 7.50$, $SD = 5.21$), exciting ($M = 11.43$, $SD = 5.05$), fun ($M = 11.92$, $SD = 5.48$), and aggressive ($M = 10.46$, $SD = 6.53$) they perceived the video game they played to be. Participants who played the violent video game rated it as more (not surprisingly) more aggressive, $F(3, 72) = 28.31$, $p < .001$, $partial \eta^2 = .54$, than those who played the neutral video game. Groups did not significantly differ on ratings of boringness, $F(3, 72) = 1.23$, $p = .304$, $partial \eta^2 = .05$; excitability, $F(3, 72) = 0.98$, $p = .408$, $partial \eta^2 = .04$; or fun, $F(3, 72) = 1.735$, $p = .168$, $partial \eta^2 = .07$. With respect to how frustrating the games were, initial descriptive analyses indicated that participants may not have responded to this item appropriately, as the pattern of means followed a graded pattern (see Section 6.6). Given the fact that the manipulation checks were administered post-manipulation, participants may have responded to this item with reference to their experience as a whole. That is, any frustration experienced due to exposure to heat and noise may have influenced responses, thus this item was used as one of the outcome measures assessing changes in affect, cognition, and arousal.

6.2.2 Heat and Noise. Participants rated on a scale ranging from 1 to 21 how comfortable the temperature of the room was, and if they were exposed to the construction noises, how annoying they perceived these noises to be. Participants in the three risk factor ($M = 5.90$, $SD = 4.81$), and the two risk factor ($M = 5.30$, $SD = 5.98$; i.e., those in the hot 35 degree Celsius room) groups indicated that the room temperature was very uncomfortable. The single ($M = 15.17$, $SD = 4.67$) and no risk factor ($M = 15.67$, $SD = 4.46$; i.e., those in the neutral 23 degree Celsius room) groups did not. After comparing the two and three risk factor groups to the single and no risk factor groups, this difference was found to be significant, with participants exposed to the 35 degree Celsius room rating their experience as more

uncomfortable, $F(1, 72) = 71.98, p < .001, \text{partial } \eta^2 = .50$. In addition, participants in the three risk factor group indicated that the noises were very annoying ($M = 15.95, SD = 4.01$), whilst no other group indicated any annoyance from any noise ($M = 0.00, SD = 0.00$). Taken together, these results indicated that both manipulations were successful.

6.2.3 Hot Sauce. To confirm that the hot sauce manipulation was effective, participants rated on a scale ranging from 1 to 21; how hot the sauce was ($M = 6.60, SD = 1.66$), how useful the faux participant's food preferences ratings were ($M = 16.29, SD = 4.55$), the extent to which they used these ratings ($M = 15.45, SD = 5.32$), and how much they thought the faux participant would like the sauce ($M = 3.69, SD = 2.68$). Groups did not significantly differ on ratings of hotness, $F(3, 72) = 0.35, p = .786, \text{partial } \eta^2 = .02$, usefulness, $F(3, 72) = 0.09, p = .965, \text{partial } \eta^2 = .004$, or the extent to which they used the faux participants preferences sheet, $F(3, 72) = 0.48, p = .698, \text{partial } \eta^2 = .02$. However, whilst on average participants correctly recalled that the faux participant extremely disliked hot foods ($M = 3.72, SD = 2.67$), groups differed on their recall, $F(3, 72) = 5.62, p = .002, \text{partial } \eta^2 = .19$. Unexpectedly, participants in the three risk factor group indicated that they thought the other person enjoyed hot and spicy foods, compared to participants in the two risk factor group, $F(1, 72) = 13.79, p < .001, \text{partial } \eta^2 = .17$. This latter finding may have biased the results of this study, as participants in the three risk factor group may have thought it was more acceptable to allocate a larger amount of hot sauce than participants in the other groups. Thus aggression may have been under-elicited in this group.

6.3 Process Variables and Covariates

The outcome variables of hostility, affect, feelings of control, stress arousal, and physiological arousal were calculated as change scores. That is, scores obtained at time two, after the risk factor manipulations occurred, were subtracted from time one pre-manipulation scores. As such, a positive change score indicates an increase in the variable of interest, and

negative change scores indicate a decrease. This calculation method has been successfully used in the past (Brummert Lennings & Warburton, 2011; Warburton et al., 2006). These process variables, along with the aforementioned variable of frustration, are theoretically important because they represent the GAM mediating factors of affect, cognition, and arousal that are posited as precursors of aggression (Anderson & Bushman, 2002).

For all analyses on aggressive behaviour, hostility, negative affect, stress arousal, physiological arousal, and feelings of control, gender was entered as a covariate. This is because gender has been linked with aggression (Archer, 2004), and may also influence each outcome measure. For the analysis on aggressive behaviour, frustration was also entered as a covariate because it may have accounted for increases in aggressive behaviour over and above the effects of the risk factors.

6.4 Hypothesis 3: Cumulative Risk Effects on Behaviour

To test hypothesis three (i.e., as the number of risk factors participants were exposed to increased, aggressive behaviour would increase), an ANCOVA with gender and frustration entered into the model as covariates was conducted. However, it is important to note that the dependent variable (hot sauce in grams) did not conform to the assumption of normality, as the distributions for each group on hot sauce were severely skewed. Consistent with previous literature, Log10 transformations were conducted to correct for this (Warburton et al., 2006), however these analyses yielded similar significance test statistics to those analyses conducted with the untransformed hot sauce variable (see Appendices O and P). Because of these similarities, the untransformed analyses are presented here for ease of interpretation of obtained means. In addition, one participant's allocation of hot sauce (184 grams) fell more than three standard deviations above the mean, thus they were excluded as an outlier from this analysis.

The main analysis testing if there were any differences between the three risk factor group ($M = 35.25$, $SD = 42.95$), two risk factor group ($M = 23.60$, $SD = 20.73$), single risk factor group ($M = 17.59$, $SD = 18.62$), and no risk factor groups ($M = 23.11$, $SD = 18.41$) was not significant, $F(3, 69) = 1.38$, $p = .256$, $partial \eta^2 = .06$, $1-\beta = .35$. The main effects for gender, $F(1, 69) = 1.78$, $p = .186$, $partial \eta^2 = .03$, $1-\beta = .26$, and frustration, $F(1, 69) = 0.09$, $p = .769$, $partial \eta^2 < .005$, $1-\beta = .06$, were also not significant. See Figure 6 below for a graphical presentation of the means and standard errors.

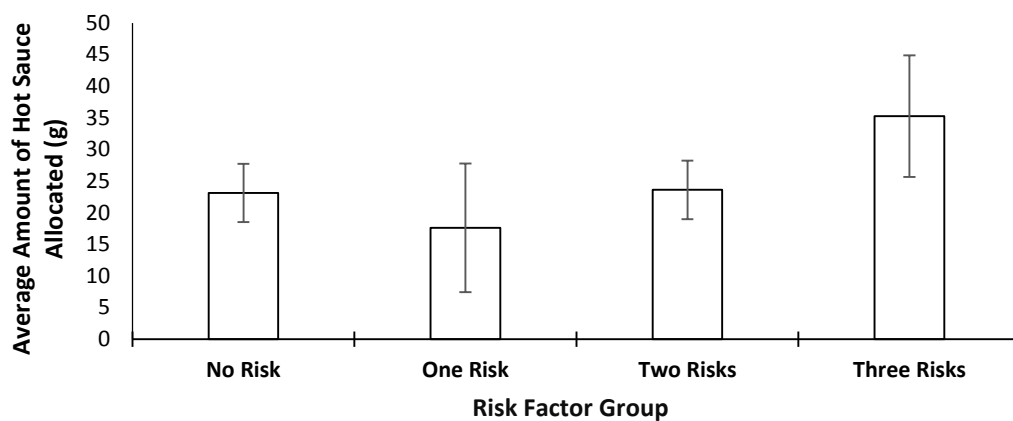


Figure 6. Mean allocation of hot sauce (in grams, g), by group. Error bars denote standard errors.

6.5 Post-Hoc Analysis

Because the mean of the three risk factor group was significantly larger than any of the means in the other groups, a post-hoc comparison was conducted to test this. Results showed that this difference was not significant, but that the effect size was small to medium, $F(1, 69) = 3.57$, $p = .063$, $partial \eta^2 = .05$, $1-\beta = .46$. This suggests that participants exposed to three risk factors may have been more aggressive than participants in any other group.

In addition, because the no risk factor control group unexpectedly allocated more hot sauce than the single risk factor group, another post-hoc analysis investigating why this may have occurred were conducted. It is likely that some demand characteristic in the methodology may have skewed the results. To assess this, the reported means of control groups from 12 published papers using the hot sauce paradigm were collected (these papers

appear in the reference list next to asterisks). In papers with designs more complex than one-way ANOVA's, mean sauce weights were averaged across control groups.

On average, published papers reported control group means for hot sauce allocation to be 8.37 ($SD = 5.97$). An independent samples t -test was then computed, comparing this to the mean in the current study. Results revealed that the mean of the current study was significantly higher than the means reported in published papers, $t(11) = 2.37, p = .037, d = .88$. Thus, some bias may have been present in the current study, thereby skewing the results.

6.6 Hypothesis 4: Cumulative Risk Effects on Internal Processes

6.6.1 Hostility. To test if hostility increases as the number of risk factors participants were exposed to increased, an ANCOVA with gender entered into the model was conducted. One participant in the no risk factor group's score (16) fell more than three standard deviations above the mean. This participant was thus excluded as an outlier from this analysis. The main effect of group was significant, $F(3, 70) = 11.26, p < .001, partial \eta^2 = .33, 1-\beta = 1.00$, indicating that changes in hostility increased as the number of risk factors for aggression increased. Gender was not significant, $F(1, 70) = 0.85, p = .360, partial \eta^2 = .01, 1-\beta = .15$, indicating that changes in hostility were not dependent on gender.

The three planned contrasts revealed that differences between groups (after Bonferroni adjustments) on changes in hostility were not significant. There were no differences between the; three risk factor group ($M = 13.55, SD = 11.19$) and the two risk factor group ($M = 8.75, SD = 7.66$), $F(1, 70) = 3.34, p = .072, partial \eta^2 = .05, 1-\beta = .44$; the two risk factor group and the single risk factor group ($M = 2.83, SD = 8.45$), $F(1, 70) = 4.66, p = .034, partial \eta^2 = .06, 1-\beta = .57$; and the single risk factor group and the no risk factor group ($M = -1.53, SD = 3.32$), $F(1, 70) = 2.23, p = .140, partial \eta^2 = .03, 1-\beta = .31$. See Figure 7 below for a graphical presentation of the means and standard errors.

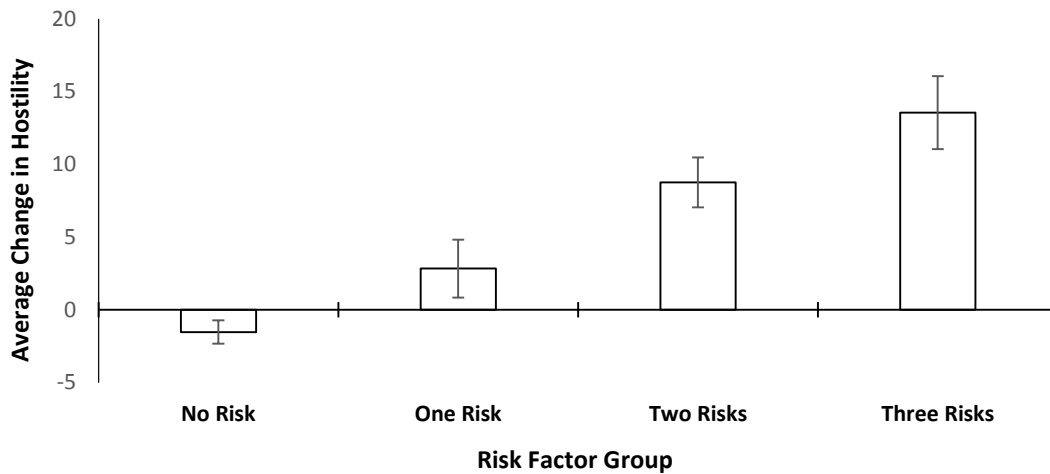


Figure 7. Mean change in hostility, by group. Error bars denote standard errors.

6.6.2 Affect. To test if negative affect increased as the number of risk factors participants were exposed to increased, an ANCOVA with gender entered into the model was conducted. The main effect of risk factor group was significant, $F(3, 71) = 13.29, p < .001$, $\text{partial } \eta^2 < .36$, $1-\beta = 1.00$, indicating that as the number of risk factors increased, negative affect increased. Gender was also significant, $F(1, 71) = 7.07, p = .010$, $\text{partial } \eta^2 = .09$, $1-\beta = .75$, indicating that females experienced greater negative affect than males.

The single risk factor ($M = -7.39, SD = 13.33$) group significantly differed (after Bonferroni adjustments) from the no risk factor group ($M = 4.11, SD = 9.09$), $F(1, 71) = 7.72, p = .007$, $\text{partial } \eta^2 = .10$, $1-\beta = .78$, indicating that the single risk factor group experienced more negative affect than the no risk factor group. However, the three risk factor group ($M = -20.05, SD = 14.95$) did not differ from the two risk factor group ($M = -14.70, SD = 11.50$), $F(1, 71) = 1.10, p = .162$, $\text{partial } \eta^2 = .03$, $1-\beta = .29$; and the two risk factor group did not differ from the single risk factor group, $F(1, 71) = 3.19, p = .079$, $\text{partial } \eta^2 = .04$, $1-\beta = .42$. See Figure 8 below for a graphical presentation of the means and standard errors.

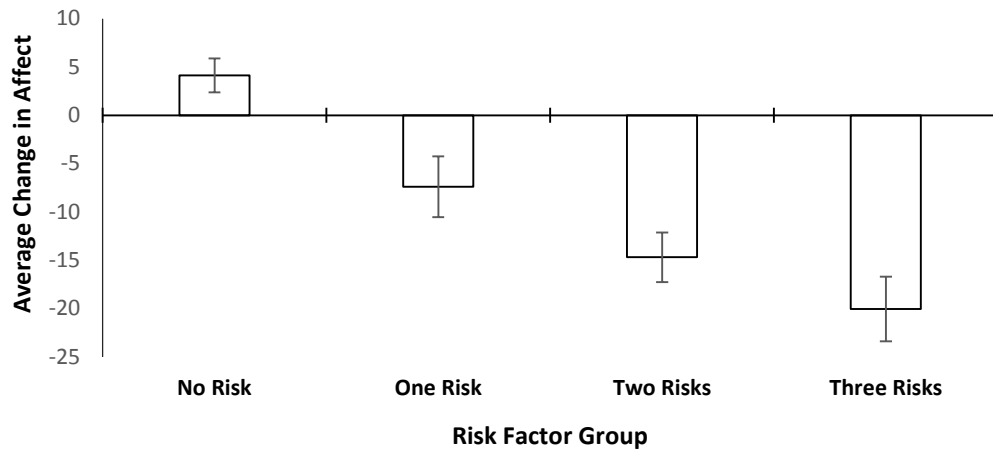


Figure 8. Mean change in affect, by group. Error bars denote standard errors.

6.6.3 Stress Arousal. To test if stress arousal increased as the number of risk factors participants were exposed to increased, an ANCOVA with gender entered into the model was conducted. The main effect of risk factor group was significant, $F(3, 71) = 10.36, p < .001$, $\text{partial } \eta^2 = .30, 1-\beta = 1.00$, indicating that as the number of risk factors increased, stress arousal also increased. The main effect of gender was also significant, $F(1, 71) = 4.74, p = .033$, $\text{partial } \eta^2 = .06, 1-\beta = .56$, indicating that female participants had higher levels of stress arousal than males. As expected (after Bonferroni corrections), participants in the single risk factor group ($M = 4.22, SD = 6.86$) experienced significantly more stress arousal than participants in the no risk factor group ($M = -1.28, SD = 4.34$), $F(1, 71) = 8.22, p = .005$, $\text{partial } \eta^2 = .10, 1-\beta = .81$. However, the three risk factor group ($M = 8.65, SD = 5.98$) did not differ from the two risk factor group ($M = 6.75, SD = 5.45$), $F(1, 71) = 1.16, p = .286$, $\text{partial } \eta^2 = .02, 1-\beta = .19$; and the two risk factor group did not differ from the single risk factor group, $F(1, 71) = 1.73, p = .193$, $\text{partial } \eta^2 = .02, 1-\beta = .25$. See Figure 9 below for a graphical presentation of the means and standard errors.

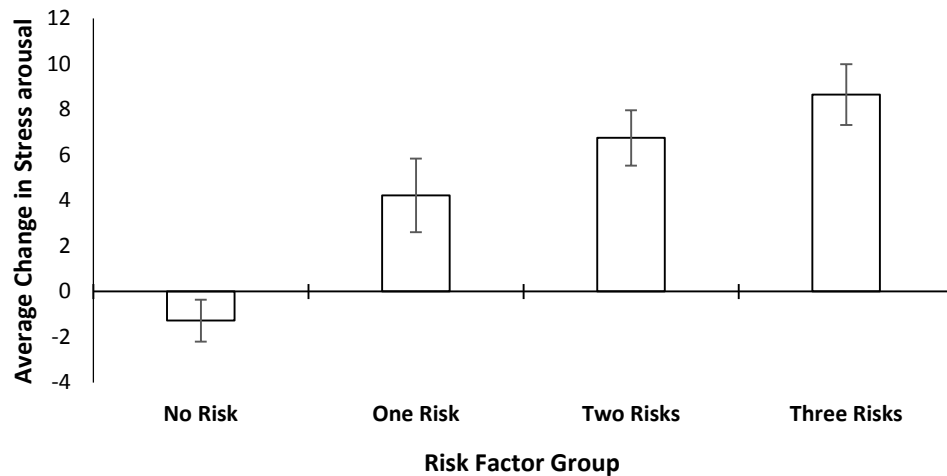


Figure 9. Mean change in stress arousal, by group. Error bars denote standard errors.

6.6.4 Physiological Arousal. To test if self-reported physiological arousal increased as the number of risk factors participants were exposed to increased, an ANCOVA with gender entered into the model was conducted. The main analysis testing if there were any detectable differences in the means between the three risk factor group ($M = -0.25$, $SD = 8.71$), two risk factor group ($M = 2.75$, $SD = 6.68$), single risk factor group ($M = 3.17$, $SD = 4.76$), and no risk factor groups ($M = 2.89$, $SD = 5.95$) was not significant, $F(3, 70) = 1.45$, $p = .236$, $partial \eta^2 = .06$, $1-\beta = .37$. Additionally, the main effect of gender was not significant, $F(1, 71) = .26$, $p = .609$, $partial \eta^2 < .01$, $1-\beta = .08$. Because the omnibus test was not significant, no follow up contrasts were carried out. See Figure 10 below for a graphical presentation of the means and standard errors.

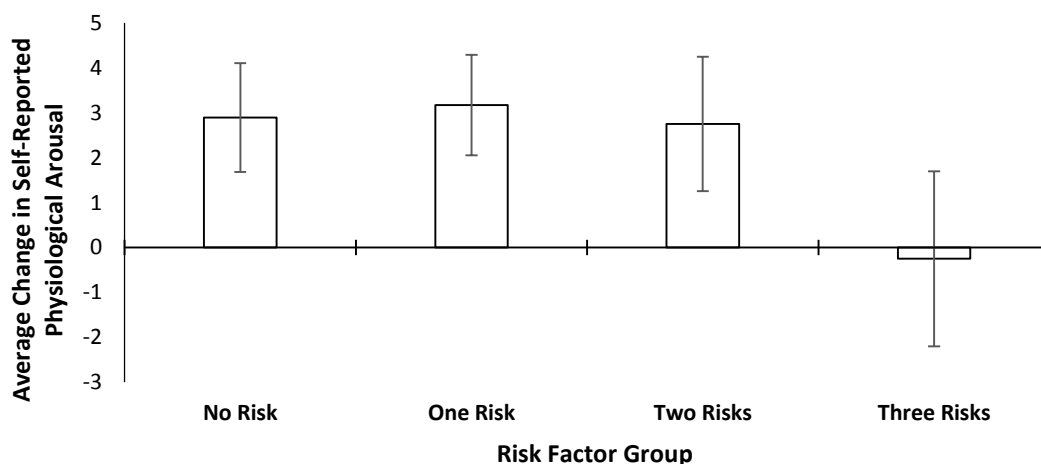


Figure 10. Mean change in physiological arousal, by group. Error bars denote standard errors.

6.6.5 Control. To test if feelings of perceived control decreased as the number of risk factors participants were exposed to increased, an ANCOVA with gender entered into the model was conducted. One participant in the no risk factor group's score (-15) fell more than three standard deviations below the mean and thus was excluded as an outlier from this analysis. The main effect of risk factor group was significant, $F(3, 70) = 10.91, p < .001$, $\text{partial } \eta^2 = .32$, $1-\beta = 1.00$, indicating that as the number of risk factors increased, feelings of control decreased. Gender was not significant, $F(1, 70) = 3.66, p = .060$, $\text{partial } \eta^2 = .05$, $1-\beta = .47$.

The three planned contrasts revealed groups did not significantly differ (after Bonferroni adjustments) on changes in control. The three risk factor ($M = -5.55, SD = 5.55$) group did not differ from the two risk factor group ($M = -3.05, SD = 4.38$), $F(1, 70) = 3.57, p = .063$, $\text{partial } \eta^2 = .05$, $1-\beta = .46$; the two risk factor group did not differ from the single risk factor group ($M = -0.67, SD = 3.53$), $F(1, 70) = 2.84, p = .097$, $\text{partial } \eta^2 = .04$, $1-\beta = .38$; and the single risk factor group did not differ from the no risk factor group ($M = 2.29, SD = 2.82$), $F(1, 70) = 3.89, p = .052$, $\text{partial } \eta^2 = .05$, $1-\beta = .49$. See Figure 11 below for a graphical representation of the means and standard errors.

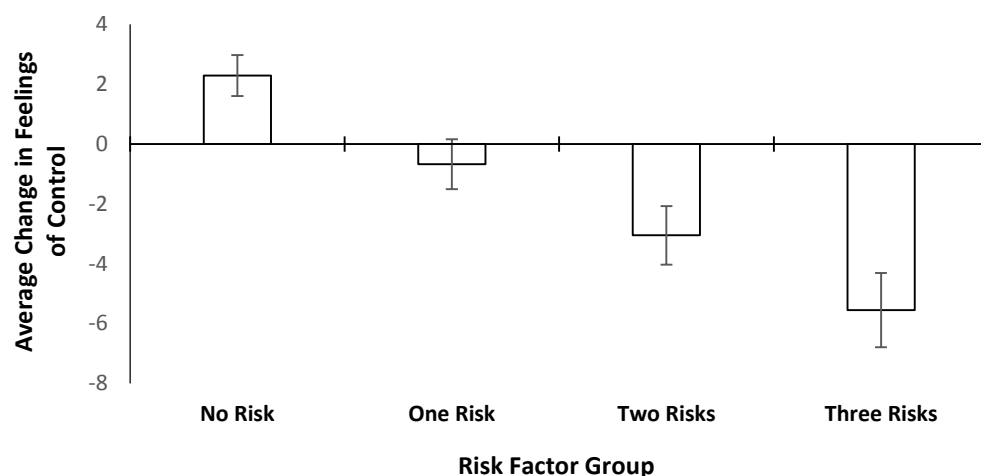


Figure 11. Mean change in feelings of control, by group. Error bars denote standard errors.

6.6.6 Frustration. To test if frustration increased as the number of risk factors participants were exposed to increased, an ANCOVA with gender entered into the model was conducted. The main effect of group was significant, $F(3, 71) = 26.51, p < .001, \text{partial } \eta^2 = .53, 1-\beta = 1.00$, as the number of risk factors increased, frustration increased. Gender was also significant, $F(1, 71) = 8.47, p = .005, \text{partial } \eta^2 = .11, 1-\beta = .82$, indicating that females were more frustrated than males.

The single risk factor group ($M = 11.50, SD = 4.97$) significantly differed (after Bonferroni adjustments) from the no risk factor group ($M = 3.78, SD = 2.56$), $F(1, 71) = 27.83, p < .001, \text{partial } \eta^2 = .28, 1-\beta = .99$, indicating that the single risk factor group was more frustrated than the no risk factor group. The two risk factor group ($M = 15.00, SD = 4.03$) marginally significantly differed from the single risk factor group, $F(1, 71) = 5.77, p = .019, \text{partial } \eta^2 = .08, 1-\beta = .66$, giving some indication that the two risk factor group was more frustrated than the single risk factor group. However, the three risk factor group ($M = 15.00, SD = 5.75$) did not differ from the two risk factor group, $F(1, 71) = 0.00, p = 1.00, \text{partial } \eta^2 = 0.00, 1-\beta = .05$. See Figure 12 below for a graphical presentation of the means and standard errors.

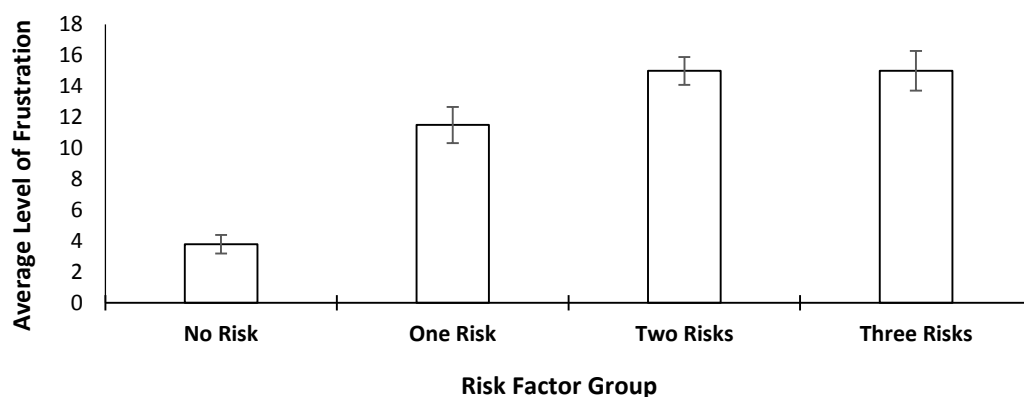


Figure 12. Mean level of frustration, by group. Error bars denote standard errors.

7. Discussion

The primary aims of study two were to test the proximate effects of external risk factors for aggression, and to examine whether exposure to an increasing number of risk factors would lead to a linear increase in aggression.

7.1 Hypothesis 3: External Risk Factor Effects on Aggressive Behaviour

The hypothesis that aggression would increase as risk factors increased was partially supported. Contrary to expectations, the no risk factor group with participants playing the neutral video game allocated more hot sauce than the single risk factor group with participants playing the violent game. This is contrary to past findings using the hot sauce paradigm, where participants in the control group regularly allocate significantly less hot sauce than groups exposed to violent media (e.g., Brummert Lennings & Warburton, 2011). As expected, the two risk factor group allocated more hot sauce than the single risk factor group, and the three risk factor group allocated more hot sauce than the two risk factor group. However these differences were not significant, likely due to insufficient statistical power because of limitations on participant availability for Master of Research students. Nevertheless, the obtained pattern of means was consistent with the literature on heat, noise and video games where exposure to these risk factors led to an increase in aggressive behaviour (e.g., Anderson, 2001; Anderson et al., 2010; Geen & McCown, 1984), and is somewhat suggestive that an accumulation of such risk factors may increase aggression concomitantly.

To further investigate the inconsistent result regarding the difference between the no risk factor and two risk factor groups, a post-hoc t-test comparing the no risk factor control group mean to obtained means on hot sauce allocation extant in the literature. The difference was significant, with the mean hot sauce allocation of the control group in the current study being higher than the means obtained in other studies. This suggests that there may have been

some sort of demand characteristic that led participants in the control group to believe that allocating a large amount of hot sauce was acceptable or desirable in the situation. This may be because the experimenter did not make it clear enough that lower amounts of hot sauce were acceptable, or that the sauce was not hot enough for participants to realise that the amount being allocated could cause harm. Nonetheless, it should be noted that the biggest leap in aggressive behaviour was clearly that between the two and three risk factor groups.

Although the post-hoc contrast comparing the three risk factor group to all other groups was not significant due to low power, it produced a medium effect size indicating that the three risk factor group was likely the most aggressive of all. This finding suggests a possible threshold effect, where a certain amount of risk factors are required for an aggressive impulse to translate into an aggressive response. However, as regards the overall pattern of means in the single, two, and three risk factor groups, the level of observed aggression increased in a linear fashion, which suggests a cumulative effect. This suggests that external risk factors for aggression have a greater influence on proximal short-term aggression when they combine.

On the whole, these findings are consistent with the GAM (Anderson & Bushman, 2002), which predicts that external situational factors can increase the likelihood of a short-term aggressive response by triggering aggression through the activation of any or all of the cognitive, affective, and arousal routes. Because previous literature indicates that violent video games strongly influence aggressive cognitions (e.g., Anderson & Dill, 2000), hot temperatures influence affective states (e.g., Anderson et al., 1996), and aversive noises strongly impact physiological arousal states (Geen & McCown, 1984), it may be the case that this accumulation of risk occurred because of the combined activation of all three of these routes. That is, the observed graded effect may be a direct result of the additional activation of different routes outlined in the GAM.

Although one should interpret non-significant findings carefully, the observed cumulative pattern that may have been a true effect is supportive of previous research which theorises that such an effect should occur (e.g., Farrington, 2000; Gentile & Bushman, 2012). These findings also extend the existing literature, by demonstrating for the first time that this accumulation of risk may occur for short-term instances of aggression. This in turn suggests that taking into account the proximity of risk factors may be a valuable addition to modelling cumulative risk effects.

One odd finding needs further exploration; manipulation checks for the hot sauce paradigm indicated that the three risk factor group reported that the faux participant liked hot foods more than was expected. Although this could be interpreted as undermining the validity of the findings as participants should believe that consuming a lot of hot sauce will harm the target, it is also possible that because participants completed these manipulation checks after hot sauce allocation, they may have felt ashamed and attempted to justify their aggression by providing higher ratings of the faux participant's liking of the hot sauce. Other studies have reported participants feeling shame about their level of hot sauce allocation (e.g., Warburton et al., 2006), and such an explanation seems likely, although future studies should be conducted to replicate the current study's findings.

7.2 Hypothesis 4: External Risk Factor Effects on Affect, Cognition, and Arousal

The hypothesis that hostility, negative affect, stress arousal, and physiological arousal would increase, but feelings of control would decrease as the number of risk factors increased was mostly supported. There were clear main effects, and linear changes to means as risk factors accumulated for all of these internal process measures barring physiological arousal, a construct notoriously hard to measure (see Anderson et al., 1995). Because of the unexpected finding regarding game frustration, this was also incorporated as an internal process measure possibly underlying aggression, and this variable also demonstrated a clear main effect, and a

similar pattern of linear changes to the means. All of these findings were across gender (a known risk factor for aggression; Archer, 2004), which was also a significant predictor for some of these outcomes.

These findings all align with previous literature indicating that violent video game play, heat, and noise all lead to increases in hostility, negative affect, stress arousal, and decreased feelings of perceived control (e.g., Anderson et al., 1996; Anderson & Bushman, 2001; Barlett et al., 2008; Geen & McCown, 1984). The findings also extend this literature by showing that these effects can occur cumulatively, after exposure to a range of risk factors. Taken together these findings suggest that, in line with the GAM (Anderson & Bushman, 2002), the possible cumulative increase in aggressive behaviour may have been caused by increased activation of aggressive cognitions, affects, and arousal. This is consistent with the notion that even risk factors with smaller effects on aggression can be important when considered in a cumulative risk framework (Gentile & Bushman, 2012; Huesmann & Taylor, 2006).

Whilst the planned contrasts conducted were mostly non-significant (likely due to low power), the observed linear increases and decreases on the means for the various measures of aggressive cognitions, affects, and arousal is indicative of a cumulative risk effect. As with the previous analyses pertaining to aggressive behaviour, this is line with past cumulative risk research (e.g., Farrington, 2000; Loeber & Hay, 1997; Ribeaud & Eisner, 2010), and extends it by demonstrating that an accumulation of risk can occur in the short-term. In addition, these findings demonstrate that this accumulation of risk occurs across a range of internal factors known to underlie short-term instances of aggression. These may or may not in turn lead to actual aggressive behaviour, but would almost certainly increase its likelihood. In terms of mapping risk factors along an internal-external axis, it is clear that external risk factors are important for understanding aggression, particularly in the short-term.

In addition, the unexpected findings related to video game frustration deserves particular attention. As previously noted (see section 6.2.1), it may be the case that participants were responding with reference to their experience as a whole, rather than to just the video game play. This seems likely given the observed linear increase in frustration matched those for the other process variables. It has previously been argued that game frustration may confound media violence research (Przybylski, Deci, Rigby, & Ryan, 2014). The violent version of the video game used in this experiment, like all violent games, provided the opportunity for the game character participants assumed to be killed, and as noted previously (see section 2.4), participants were specifically instructed on what to do in case this occurred. It is possible that some participants, especially if they were novices, may have repeatedly been killed by hostile creatures throughout the game, leading to frustration. However, it has also been argued that violent video games are inherently more frustrating than neutral video games, indicating that the entire violent video game play experience can holistically be considered as a risk factor for aggression (Gentile, 2015). Thus frustration may be best considered in this study as an additional risk factor, rather than as a confound. Nonetheless, future research may benefit from using matched stimuli, with a violent video game that does not involve the opportunity to be killed.

The observed linear changes in internal processes (including frustration) likely predisposed individuals to behave aggressively (see Anderson & Bushman, 2002), but this predisposition may not always lead to aggression. This may be due to appraisal processes as described in the GAM (Anderson & Bushman, 2002), but it is also possible that aggression may not result until a certain threshold is met. That is, an increased likelihood of aggression becomes most apparent after exposure to three risk factors, possibly with a concomitant increase in activation of aggression-related processes outlined by the GAM reaching a critical level.

7.3 Strengths and Weaknesses

The strengths of this study relate to its unique design, as it was the first to experimentally test for short-term cumulative risk effects. It was also unique with respect to its direct investigation of underlying processes within the GAM (Anderson & Bushman, 2002), and aggressive behaviour in the context of a cumulative risk framework. However, as previously noted some methodological issues may have biased the results of this experiment. A limitation of subject pool availability for Master of Research students resulted in lower than optimal participant numbers and lower power. This meant that some non-significant findings may have been significant with more power. In addition, the control group may have been influenced by demand characteristics that made interpretation of the aggression measure for this group difficult. Thus replication of this experiment using a larger sample, with alternate methodology (e.g., the Competitive Reaction Time Task; Anderson & Dill, 2000) may help to bring some clarity to the findings.

8. General Discussion

The present research was, to the best of the author's knowledge, the first to examine short-term cumulative risk effects. Study one reinforced the findings of previous literature that indicated that internal risk factors for aggression had stronger effects (Ribeaud & Eisner, 2010), and also lent some support to the claim that even small effects from external risk factors can be important (Gentile & Bushman, 2012; Huesmann & Taylor, 2006). Study two in particular highlighted the role of external risk factors in eliciting aggression as, when combined together, they led to higher levels of internal states known to elicit aggression, and a possible increase in aggressive behaviour. It also highlighted that risk factors can be mapped along an axis for internality versus externality, as the more internally situated a risk factor was, the more strongly it predicted aggression. Study one in particular, also provided evidence to suggest that risk factors can cluster by type in the individual, such that the most

aggressive individuals would theoretically possess a greater number of internal risk factors for aggression. That is, aggressive people seemed to be more impulsive, more likely to have callous-unemotional traits, and possesses a wide range of aggressive beliefs and knowledge structures concurrently.

Whilst it may be difficult to manage internal risk factors for aggression, these findings imply that by managing external risk factors one can potentially meaningfully reduce the likelihood of real-world aggression. Simple measures such as limiting one's consumption of violent media, turning on the air conditioning, or reducing environmental noise can potentially have significant impacts on reducing aggression. However, more research examining the role of multiple risk factors on both short- and long-term aggressive outcomes is warranted. In addition, determining the boundary conditions by which cumulative risk effects occur may help to develop more targeted approaches to managing aggression. Future research investigating short-term cumulative risk effects, may have implications for policy makers as reforms towards reducing the effects of noise pollution in urban areas, and regulating the video gaming industry may help to reduce every day acts of aggression.

It may also be judicious to examine the role of protective factors in future. The primary focus of this thesis was on the accumulation of risk factors for aggression, however it is likely that an accumulation of protective (or resiliency) factors may also occur, thereby reducing aggression (Gentile & Bushman, 2012). This may have theoretical implications, as it may be the case that protective factors can also be conceptualised along the internal versus external axis proposed in this thesis. This may also have implications for current understandings of the GAM (Anderson & Bushman, 2002) and GLM (Buckley & Anderson, 2006). Since study two demonstrated that an accumulation of risk was most notable in the processes underpinning aggression as outlined by the GAM, it would be of great theoretical importance to demonstrate that protective factors may also demonstrate similar patterns of

accumulation. Because most research to date has focused on the role of single risk factors for aggression independent of each other, the present research highlights the robustness of the GAM and GLM in a multi-causal cumulative context.

8.1 Overall Summary and Conclusion

This two part study examined short- and long-term cumulative risk effects with reference to both internal and external risk factors for aggression. Taken together, the results from studies one and two indicated that a) internal risk factors are stronger predictors than external risk factors for long-term trait aggression; b) risk factors tend to cluster by type, along the proposed internal-external axis, and within the individual; and c) an accumulation of risk factors can impact upon short-term instances of aggression and the underlying internal mechanisms of cognition, affect and arousal that underlie aggression (and indeed, all social behaviour). However, there were some methodological issues that impacted the interpretability of the findings. Specifically, the exploratory nature of the correlational research indicates that confirmatory follow-up studies should be conducted. In addition, the experimental study was underpowered, and had issues with control group data in particular, indicating that a replication of the findings should occur. Nonetheless, this study has contributed to extending knowledge regarding the effects of internal and external risk factors for aggression. The findings highlight that because aggression is multi-causal, managing such risk factors in a holistic fashion may help to significantly reduce its negative social impacts.

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Appendices

Please note that the following measures (unless otherwise specified) in the appendices are all reproduced and published in the public domain, therefore copyright has not been breached.

Appendix A**MTURK Advertisement - Study 1.**

You are invited to participate in a study exploring the interaction between different personality traits. You will need to answer some simple questionnaires, which should take 1 hour or so. You will receive USD\$1 per 30 minutes (i.e., a total of USD\$2) for your participation.

Please note: you must be currently residing in the United States of America to be eligible to complete this study.

Appendix B – Study 1 Questionnaires**Sociodemographics**For MTURK participants only

1. What is your age?
2. What is your gender?
3. What country were you born in?
4. What is your ethnicity?
5. What country do you currently reside in?
6. What is your postcode?
7. What is your occupation?
 - Blue collar /service
 - Clerical
 - Self-employed
 - Professional or managerial
 - Other (e.g., student, homemaker, unemployed) _____
8. What is the highest level of education you have completed?
 - Primary school
 - High school
 - Trade qualification or Certificate (e.g., carpentry, hairdressing)
 - Diploma
 - Some university
 - Bachelor degree
 - Postgraduate degree
9. What is your total household income (before tax is taken out)?
 - Under 50,000
 - 50,001 – 80,000
 - 80,001 – 110,000
 - 110,001 - 140,000
 - 140,001 – 170,000
 - Over 170,000

Aggression Questionnaire (AQ; Buss & Perry, 1992)

For the following items please rate how characteristic each is of you. Using the following rating scale record your answer

- 1 = Extremely uncharacteristic of me**
- 2 = Somewhat uncharacteristic of me**
- 3 = Only slightly characteristic of me**
- 4 = Somewhat characteristic of me**
- 5 = Extremely characteristic of me**

Physical Aggression

- 1. Once in a while I can't control the urge to strike another person
- 2. Given enough provocation, I may hit another person
- 3. If somebody hits me, I hit back.
- 4. I get into fights a little more than the average person.
- 5. If I have to resort to violence to protect my rights, I will.
- 6. There are people who pushed me so far that we came to blows.
- 7. I can think of no good reason for ever hitting a person (R)
- 8. I have threatened people I know
- 9. I have become so mad that I have broken things

Verbal Aggression

- 1. I tell my friends openly when I disagree with them
- 2. I often find myself disagreeing with people
- 3. When people annoy me, I may tell them what I think of them
- 4. I can't help getting into arguments when people disagree with me
- 5. My friends say that I'm somewhat argumentative

Anger

- 1. I flare up quickly but get over it quickly
- 2. When frustrated, I let my irritation show

3. I sometimes feel like a powder keg ready to explode
4. I am an even-tempered person (R)
5. Some of my friends think I'm a hothead
6. Sometimes I fly off the handle for no good reason
7. I have trouble controlling my temper

Hostility

1. I am sometimes eaten up with jealousy
2. At times I feel I have gotten a raw deal out of life
3. Other people always seem to get the breaks
4. I wonder why sometimes I feel so bitter about things
5. I know that "friends" talk about me behind my back
6. I am suspicious of overly friendly strangers
7. I sometimes feel that people are laughing at me behind my back
8. When people are especially nice, I wonder what they want

Normative Beliefs about Aggression Scale (NOBAGS; Krahé & Möller, 2004)

Please indicated the extent to which you consider the respective behaviour described in the following statements as acceptable using the Rating scale of:

- 1= Totally OK**
- 2= Somewhat OK**
- 3= Not really OK**
- 4= Not at all ok**

Relational Aggression

1. To threaten to stop being friends with someone after a quarrel is...
2. To spread rumors about others is...
3. To treat another person as though he/she didn't exist when one is in a bad mood is...
4. To say nasty things about a person behind his/her back is...
5. To play people out against one another is...
6. To tell lies about other people is...
7. To stir others up against a particular person is...
8. To show someone up in front of others is...

Physical Aggression

1. To threaten to beat another person up who has made one angry is...
2. To destroy something belonging to another person as an act to revenge is...
3. To take something away from another person when one is in a bad mood is...
4. To kick and push a person who has made one really angry is...
5. To push others around when one is really angry is...
6. To threaten to gang up with others to beat someone up is...
7. To hit another person the same age as oneself is...

Attitudes towards Violence Scale (ATVS; Lonsway & Fitzgerald, 1995)

Please rate your level of endorsement for each of these statements are of you on the Rating

Scale:

- 1 = strongly disagree**
- 2 = disagree**
- 3 = slightly disagree**
- 4 = neither agree or disagree**
- 5 = slightly agree**
- 6 = agree**
- 7 = strongly agree**

1. Violent crimes should be punished violently.
2. The death penalty should be part of every penal code.
3. Any prisoner deserves to be mistreated by other prisoners in jail.
4. Any nation should be ready with a strong military at all times.
5. The manufacture of weapons is necessary.
6. War is often necessary.
7. The government should send armed soldiers to control violent university riots.
8. Our country should be aggressive with its military internationally.
9. Killing of civilians should be accepted as an unavoidable part of war.
10. Our country has the right to protect its borders forcefully.
11. A child's habitual disobedience should be punished physically.
12. Giving mischievous children a quick slap is the best way to quickly end trouble.
13. Children should be spanked for temper tantrums.
14. Punishing children physically when they deserve it will make them responsible and mature adults.
15. Young children who refuse to obey should be whipped.
16. It is all right for a partner to hit the other if they are unfaithful.
17. It is all right for a partner to slap the other if insulted or ridiculed.
18. It is all right for a partner to slap the other's face if challenged.

19. An adult should whip a child for breaking the law.
20. It is all right for a partner to hit the other if they flirt with others.

Honor Ideology for Manhood Scale (HIM; Barnes et al., 2012)

Please rate your level of endorsement for each of these statements are of you on the Rating

Scale:

- 1 = disagree strongly**
- 2 = mostly disagree**
- 3 = disagree**
- 4 = slightly disagree**
- 5 = undecided**
- 6 = slightly agree**
- 7 = agree**
- 8 = mostly agree**
- 9 = strongly agree**

1. A man has the right to act with physical aggression toward another man who calls him an insulting name.
2. A real man doesn't let other people push him around.
3. A man has the right to act with physical aggression toward another man who slanders his family.
4. A real man can always take care of himself.
5. A man has the right to act with physical aggression toward another man who openly flirts with his wife.
6. A real man never lets himself be a "door mat" to other people.
7. A man has the right to act with physical aggression toward another man who trespasses on his personal property.
8. A real man can "pull himself up by his bootstraps" when the going gets tough.
9. A man has the right to act with physical aggression toward another man who mistreats his children
10. A real man will never back down from a fight.
11. A man has the right to act with physical aggression toward another man who steals from him.
12. A real man never leaves a score unsettled.

13. A man has the right to act with physical aggression toward another man who vandalizes his home.
14. A real man doesn't take any crap from anybody.
15. A man has the right to act with physical aggression toward another man who insults his mother.
16. A real man is seen as tough in the eyes of his peers

Early Maladaptive Schema Questionnaire (YSQ-SF; Young, 1998)

Listed below are statements that a person might use to describe himself or herself. Please read each statement and decide how well it describes you. When you are not sure, base your answer on what you emotionally **feel**, not on what you **think** to be true. For each statement, choose the highest rating from 1 to 6 that describes you

- 1 = Completely untrue of me**
- 2 = Mostly untrue of me**
- 3 = Slight more true than untrue**
- 4 = Moderately true of me**
- 5 = Mostly true of me**
- 6 = Describes me perfectly**

Domain 1: Disconnection/Rejection - Consists of five schemas centred on the idea that the expectation that one's needs for safety, emotional support, affiliation, and self-esteem will not be reliably met.

Schema 1: Emotional Deprivation - Expectation of no emotional support.

Items removed for copyright purposes.

Schema 2: Abandonment - Belief that closest relationships are unstable/unreliable.

Items removed for copyright purposes.

Schema 3: Mistrust/Abuse - Expectation that others will try to hurt the individual.

Items removed for copyright purposes.

Schema 4: Social Isolation – Sense of isolation from the world, feeling as if you don't fit in.

Items removed for copyright purposes.

Schema 5: Defectiveness/Shame – Belief that one is significantly flawed, and thus unlovable.

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Domain 2: Impaired Limits - Consists of two schemas that are about one's ability to set personal limits and boundaries, realistic goals, and respect the rights of others.

Schema 6: Entitlement - Belief that one is superior to others, exclusively entitled to benefits and privileges, able to do whatever they wish, and not abide by the same rules as others.

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Schema 7: Insufficient self-control – Difficulty in exerting self-control and is frustrated easily. Difficulty restraining impulses.

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Domain 3: Impaired autonomy and performance - Consists of four schemas that focus on beliefs about oneself and one's environment that hinder one's ability to be independent of perform successfully.

Schema 8: Dependence/Incompetence – Belief that one is not competent enough to perform daily tasks without help, and a lack of confidence in tackling new challenges.

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Schema 9: Failure – Belief that one is inadequate and incapable of doing well.

Items removed for copyright purposes.

Schema 10: Vulnerability to Harm or Illness – Belief that an uncontrollable catastrophe is imminent.

Items removed for copyright purposes.

Schema 11: Enmeshment – Unhealthy or excessive emotional involvement with a close group, typically the family that hinders one from becoming independent.

Items removed for copyright purposes.

Domain 4: Other directedness - Consists of two schemas (or three in the long-form of the YSQ) that focus on beliefs about one's need to meet the needs of others at their own expense to be loved and accepted.

Schema 12: Subjugation – Belief that one must surrender control of one's life to others to avoid negative outcomes.

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Schema 13: Self-Sacrifice – Belief that one must meet the needs of others at one's own expense.

Items removed for copyright purposes.

Domain 5: Over-vigilance and inhibition - Consists of two schemas (or four in the long-form of the YSQ) that focus on inhibiting emotional responses and desires to meet rigid standards.

Schema 14: Emotional Inhibition – Belief that one must inhibit emotions and impulses to avoid disappointing others, feeling shame, or a loss of control.

Items removed for copyright purposes.

Schema 15: Unrelenting Standards – Belief that one must constantly strive to meet very high standards of achievement or morality, typically to avoid criticism.

Items removed for copyright purposes.

Psychopathy Scale (LPS; Levenson et al., 1995)

Please rate your level of endorsement for each of these statements are of you on the Rating

Scale:

- 1 = disagree strongly**
- 2 = disagree**
- 3 = agree**
- 4 = strongly agree**

Primary

1. Success is based on survival of the fittest; I am not concerned about the losers.
2. For me, what's right is whatever I can get away with.
3. In today's world, I feel justified in doing anything I can get away with to succeed.
4. My main purpose in life is getting as many goodies as I can.
5. Making a lot of money is my most important goal.
6. I let others worry about higher values; my main concern is with the bottom line.
7. People who are stupid enough to get ripped off usually deserve it.
8. Looking out for myself is my top priority.
9. I tell other people what they want to hear so that they will do what I want them to do.
10. I would be upset if my success came at someone else's expense.
11. I often admire a really clever scam.
12. I make a point of trying not to hurt others in pursuit of my goals.
13. I enjoy manipulating other people's feelings.
14. I feel bad if my words or actions cause someone else to feel emotional pain.
15. Even if I were trying very hard to sell something, I wouldn't lie about it.
16. Cheating is not justified because it is unfair to others.

Secondary

1. I find myself in the same kinds of trouble, time after time.
2. I am often bored.

3. I find that I am able to pursue one goal for a long time.
4. I don't plan anything very far in advance.
5. I quickly lose interest in the tasks I start.
6. Most of my problems are due to the fact that other people just don't understand me.
7. Before I do anything, I carefully consider the possible consequences.
8. I have been in a lot of shouting matches with other people.
9. When I get frustrated, I often "let off steam" by blowing my top.
10. Love is overrated.

Machiavellianism Scale (Mach-IV; Christie & Geis, 1970)

Please rate your level of endorsement for each of these statements are of you on the Rating Scale

- 1 = disagree strongly**
- 2 = disagree**
- 3 = undecided**
- 4 = agree**
- 5 = strongly agree**

1. Never tell anyone the real reason you did something unless it is useful to do so.
2. The best way to handle people is to tell them what they want to hear.
3. One should take action only when sure it is morally right.
4. Most people are basically good and kind.
5. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.
6. Honesty is the best policy in all cases.
7. There is no excuse for lying to someone else.
8. Generally speaking, people won't work hard unless they're forced to do so.
9. All in all, it is better to be humble and honest than to be important and dishonest.
10. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which carry more weight.
11. Most people who get ahead in the world lead clean, moral lives.
12. Anyone who completely trusts anyone else is asking for trouble.
13. The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.
14. Most people are brave.
15. It is wise to flatter important people.
16. It is possible to be good in all respects.
17. P.T. Barnum was wrong when he said that there's a sucker born every minute.

18. It is hard to get ahead without cutting corners here and there.
19. People suffering from incurable diseases should have the choice of being put painlessly to death.
20. Most people forget more easily the death of their parents than the loss of their property.

Overt Narcissism (NPI-16; Ames et al., 2006)

Below is a list of paired statements. For each pair, please endorse the statement that most accurately describes you.

I know that I am good because everybody keeps telling me so	When people compliment me I sometimes get embarrassed
I like to be the center of attention	I prefer to blend in with the crowd
I think I am a special person	I am no better or nor worse than most people
I like having authority over people	I don't mind following orders
I find it easy to manipulate people	I don't like it when I find myself manipulating people
I insist upon getting the respect that is due me	I usually get the respect that I deserve
I am apt to show off if I get the chance	I try not to be a show off
I always know what I am doing	Sometimes I am not sure of what I am doing
Everybody likes to hear my stories	Sometimes I tell good stories
I expect a great deal from other people	I like to do things for other people
I really like to be the center of attention	It makes me uncomfortable to be the center of attention
People always seem to recognize my authority	Being an authority doesn't mean that much to me
I am going to be a great person	I hope I am going to be successful
I can make anybody believe anything I want them to	People sometimes believe what I tell them
I am more capable than other people	There is a lot that I can learn from other people
I am an extraordinary person	I am much like everybody else

Covert Narcissism (MCNS; Cheek et al., 2013)

Please rate your level of endorsement for each of these statements are of you on the Rating

Scale:

- 1 = disagree strongly**
- 2 = disagree**
- 3 = undecided**
- 4 = agree**
- 5 = strongly agree**

1. I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others.
2. My feelings are easily hurt by ridicule or by the slighting remarks of others.
3. When I enter a room I often become self-conscious and feel that the eyes of others are upon me.
4. I dislike sharing the credit of achievement with others.
5. I feel that I have enough on my hands without worrying about other people's troubles.
6. I feel that I am temperamentally different from most people.
7. I often interpret the remarks of others in a personal way.
8. I easily become wrapped up in my own interests and forget the existence of others.
9. I dislike being with a group unless I know that I am appreciated by at least one of those present.
10. I am secretly annoyed when other people come to me with their troubles, asking me for my sympathy.
11. I am jealous of good-looking people.
12. I tend to feel humiliated when criticized.
13. I wonder why other people aren't more appreciative of my good qualities.
14. I see other people as being either great or terrible.
15. I sometimes have fantasies about being violent without knowing why.
16. I am especially sensitive to success and failure.

17. I have problems that nobody else understands.
18. I try to avoid rejection at all costs.
19. My secret thoughts, feelings, and actions would horrify some of my friends.
20. I tend to become involved in relationships in which I alternately adore and despise the other person.
21. Even when I am in a group of friends, I often feel very alone and uneasy.
22. I resent others who have what I lack.
23. Defeat or disappointment usually shame or anger me, but I try not to show it.

Impulsivity Scale (UPPS; Whiteside & Lynam, 2001)

Please answer how often these statements apply to you on the Rating Scale of:

- 1 = Rarely/never**
- 2 = Occasionally**
- 3 = Often**
- 4 = Almost always/Always**

Premeditation

1. I have a reserved and cautious attitude toward life.
2. My thinking is usually careful and purposeful.
3. I am not one of those people who blurt out things without thinking.
4. I like to stop and think things over before I do them.
5. I don't like to start a project until I know exactly how to proceed.
6. I tend to value and follow a rational, "sensible" approach to things.
7. I usually make up my mind through careful reasoning.
8. I am a cautious person.
9. Before I get into a new situation I like to find out what to expect from it.
10. I usually think carefully before doing anything.
11. Before making up my mind, I consider all the advantages and disadvantages.

Urgency

1. I have trouble controlling my impulses.
2. I have trouble resisting my cravings (for food, cigarettes, etc.).
3. I often get involved in things I later wish I could get out of.
4. When I feel bad, I will often do things I later regret in order to make myself feel better now.
5. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.
6. When I am upset I often act without thinking.

7. When I feel rejected, I will often say things that I later regret.
8. It is hard for me to resist acting on my feelings.
9. I often make matters worse because I act without thinking when I am upset.
10. In the heat of an argument, I will often say things that I later regret.
11. I am always able to keep my feelings under control. (R)
12. Sometimes I do things on impulse that I later regret.

Sensation Seeking

1. I generally seek new and exciting experiences and sensations.
2. I'll try anything once.
3. I like sports and games in which you have to choose your next move very quickly.
4. I would enjoy water skiing.
5. I quite enjoy taking risks.
6. I would enjoy parachute jumping.
7. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.
8. I would like to learn to fly an airplane.
9. I sometimes like doing things that are a bit frightening.
10. I would enjoy the sensation of skiing very fast down a high mountain slope.
11. I would like to go scuba diving.
12. I would enjoy fast driving.

Perseverance

1. I generally like to see things through to the end.
2. I tend to give up easily. (R)
3. Unfinished tasks really bother me.
4. Once I get going on something I hate to stop.

5. I concentrate easily.
 6. I finish what I start.
 7. I'm pretty good about pacing myself so as to get things done on time.
 8. I am a productive person who always gets the job done.
 9. Once I start a project, I almost always finish it.
 10. There are so many little jobs that need to be done that I sometimes just ignore them all
- (R)

Adult Attachment Scale (AAS-R; Collins, 1996)

Please read each of the following statements and rate the extent to which it describes your feelings about romantic relationships. Please think about all your relationships (past and present) and respond in terms of how you generally feel in these relationships. If you have never been involved in a romantic relationship, answer in terms of how you think you would feel. Please use the scale below by placing a number between 1 and 5 in the space provided to the right of each statement.

1 = Not at all characteristic of me

2 = Not characteristic of me

3 = Unsure

4 = Characteristic of me

5 = Very characteristic of me

Close

1. I find it relatively easy to get close to people.
2. I don't worry about people getting too close to me.
3. I am somewhat uncomfortable being close to others. (R)
4. I am comfortable developing close relationships with others. (R)
5. I am uncomfortable when anyone gets too emotionally close to me. (R)
6. Romantic partners often want me to be emotionally closer than I feel comfortable being. (R)

Depend

1. I find it difficult to allow myself to depend on others. (R)
2. I am comfortable depending on others.
3. I find that people are never there when you need them. (R)
4. I know that people will be there when I need them
5. I find it difficult to trust others completely. (R)
6. I am not sure that I can always depend on people to be there when I need them. (R)

Anxiety

1. I often worry that romantic partners don't really love me.
2. I find that others are reluctant to get as close as I would like.
3. I often worry that romantic partners won't want to stay with me.
4. When I show my feelings for others, I'm afraid they will not feel the same about me.
5. I often wonder whether romantic partners really care about me.
6. I want to get close to people, but I worry about being hurt.

Mental Health Questionnaire (GHQ-12: De Jesus & Williams, 1985)

Please answer how true these statements are of you on the Rating Scale of:

1 = not at all

2 = same as usual

3 = rather more than usual

4 = much more than usual

HAVE YOU RECENTLY:

1. Been able to concentrate on whatever you are doing?
2. Lost much sleep over worry?
3. Felt that you are playing a useful part in things?
4. Felt capable of making decisions about things?
5. Felt constantly under strain?
6. Felt that you could not overcome your difficulties?
7. Been able to enjoy your normal day-to-day activities?
8. Been able to face up to your problems?
9. Been feeling unhappy and depressed?
10. Been losing confidence in yourself?
11. Been thinking of yourself as a worthless person?
12. Been feeling reasonably happy, all things considered?

Violent Media Exposure Scale (VME: Warburton, Gilmour, et al., 2008)

Please answer the following questions. Although exact answers are impossible for some of the questions, please be as honest and accurate as you can.

Please estimate the following:

1. In an average week, how many hours would you spend playing video games which involve 'shooting' or 'damaging' opponents, or which contain aggressive or violent themes?
2. On average, how many hours per week would you watch movies and/or television programmes in which people are hurt or killed, or which contain aggressive or violent themes?
3. On average, how many hours per week would you watch televised sports that involve rough physical contact and/or aggressive behaviour?
4. On average, how many hours per week would you listen to music which has a lyrical content in which people are hurt or killed, or which has aggressive or anti-social undertones or themes?
5. In the past month, how many books or articles would you have read in which the characters were hurt or killed, or in which there were violent or aggressive undertones or themes?

Appendix C - Study 1 Information and Consent Form

Information and Consent Form

Thank you for taking part in the study "Personality Trait Interactions". The aim of this study is to examine a range of personality traits and their interactions. We hope that this will help to make useful predictions for applications in many areas of social life such as general mental health and wellbeing.

This study is being conducted by 5th year psychology student Ms Chanelle Tarabay (chanelle.tarabay@students.mq.edu.au) as part of her masters of research project, under the supervision of Dr Wayne Warburton, from the Department of Psychology at Macquarie University (wayne.warburton@mq.edu.au, 02 9850 8643).

You are able to withdraw at any point if you feel distress or discomfort. If you are currently distressed, please contact either Ms Chanelle Tarabay (chanelle.tarabay@students.mq.edu.au) or Dr Wayne Warburton (wayne.warburton@mq.edu.au). You may also wish to contact mental health services. If distress occurs after the study, participants are encouraged to call the National Suicide Prevention Hotline (a 24 hour counselling service) on **1-800-273-8255**.

If you decide to participate, you will be asked to complete some online questionnaires examining different aspects of personality. **By pressing 'next', you are giving your consent to take part in this study.**

It is expected that your participation will take approximately 1 hour and you will be paid for your participation at a rate of USD\$1 per hour.

Ethics information:

Any information or personal details gathered in the course of the study are confidential. No individual will be identified in any publication of the results. Access to the data will be restricted to Dr Wayne Warburton, Ms Chanelle Tarabay and possibly a statistical advisor from the Macquarie University Department of Psychology. A summary of the results will be posted on the 1st Year Psychology Notice Board, and more detailed results can be made available to you by an email request to Ms Chanelle Tarabay.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without penalty.

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics and Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

By pressing 'next', you are giving your consent to take part in this study.

Appendix D – Study 1 Debrief Forms

End of Survey Information:

Thank you for completing this study.

First, we regret to inform you that this experiment necessarily contained deception. This was deemed necessary in order to maximise the likelihood that participants would make 'natural' responses.

Background

Whilst it seems that many risk factors (mental health, socioeconomic status and narcissism) increase the likelihood of mildly aggressive behaviour in most (if not all people), it is not yet known if the risk for aggression increases exponentially with the addition of further risk factors known to elicit mild aggression.

This study

In this study we tried to answer this question by administering surveys measuring various personality factors. This was part one of a wider study that also includes a secondary component run face-to-face in Australia where situational risks, such as violent media exposure, temperature and smell were manipulated. In this online component, aggression was measured by your responses to a measure of trait aggression, the Aggression Questionnaire (Buss and Perry, 1992). In the face to face component, aggression was measured as the amount of hot chilli sauce allocated to a hypothetical participant who was known to find chili aversive. These are widely used measure of mildly aggressive behaviour used across the world.

It is important to note that the types of effects tested in this study occur for all participants. For example, in previous experiments of a similar type, participants exposed to violent media have an increased likelihood of being mildly aggressive, with no type of person being 'immune' (see Anderson et al, 2003). A higher allocation of hot sauce does not reflect negatively on any participants, as it is a mild form of aggression that has been tested and such responses are well within the normal range of human responding for all people.

Again, we apologise for the deception that was used in this experiment, but hope you will understand that this deception was necessary to produce unbiased responses. You can, of course, withdraw consent now, and your data will not be used.

Please continue on to the next page to complete a debrief form if you wish to re-consent to this study

Please leave any comments here:



Online Debrief Form

Name of Project: Exploring the Cumulative Effects of Multiple Risk Factors for Aggression.

You were invited to participate in a study investigating the cumulative effects of various risk factors for aggression. That is, this study examined whether a number of factors in combination known to be linked to aggression results in an increased risk for aggression. Related factors include personality, violent media exposure, and mental health.

This study was conducted by 5th year psychology student Ms Chanelle Tarabay (chanelle.tarabay@students.mq.edu.au) as part of her masters of research project, under the supervision of Dr Wayne Warburton, from the Department of Psychology at Macquarie University (wayne.warburton@mq.edu.au, 02 9850 8643).

As a participant, you were asked to complete the first part of a two part study that consisted of a series of online surveys. The questionnaires asked about various personality and demographic factors, past exposure to violent media, general mental health, attitudes and beliefs. This should have taken approximately 1 hour, and you would have been paid a sum at a rate of USD\$1 per 30 minutes. In the second part of this study conducted on campus, another group of participants answered questionnaires about their thoughts and feelings. They also tasted and rated a food sample and played a video game for 10 minutes. The video game may have contained 'mature' or violent themes. They were also asked to package a food sample for another participant.

You were able to withdraw at any point if you felt distress or discomfort. If you are currently distressed, please contact either Ms Chanelle Tarabay (chanelle.tarabay@students.mq.edu.au) or Dr Wayne Warburton (wayne.warburton@mq.edu.au). You may also wish to contact mental health services. If distress occurs after the study, participants are encouraged to call the National Suicide Prevention Hotline (a 24 hour counselling service) on **1-800-273-8255**.

Any information or personal details gathered in the course of the study are confidential. No individual will be identified in any publication of the results. Access to the data will be restricted to Dr Wayne Warburton, Ms Chanelle Tarabay and possibly a statistical advisor from the Macquarie University Department of Psychology. A summary of the results will be posted on the 1st Year Psychology Notice Board, and more detailed results can be made available to you by an email request to Ms Chanelle Tarabay.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without forfeiting course credit.

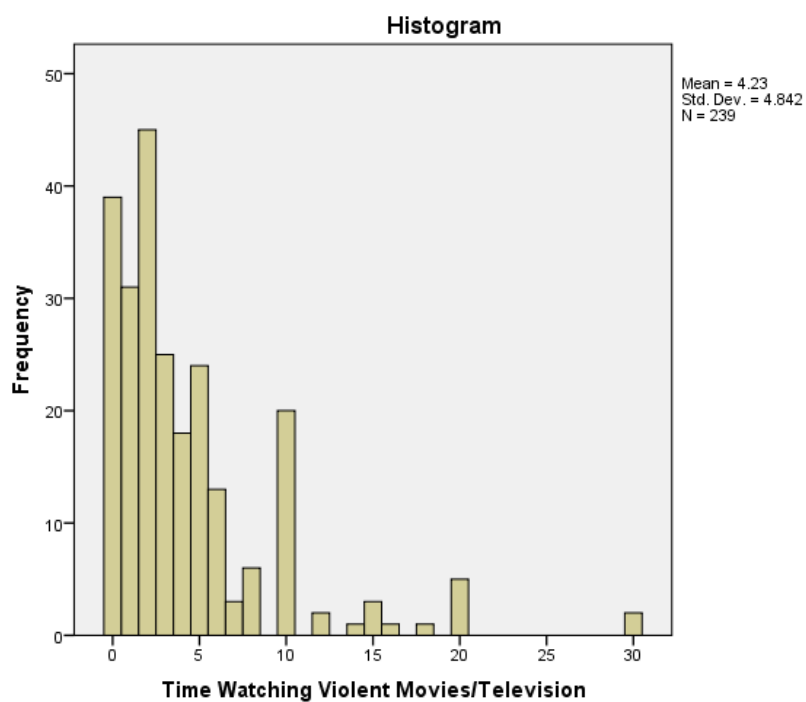
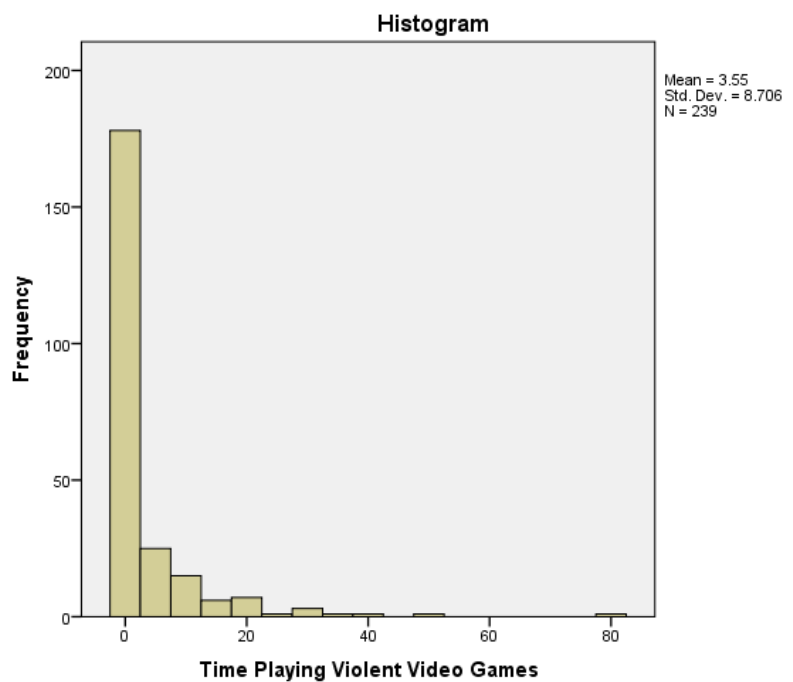
The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your

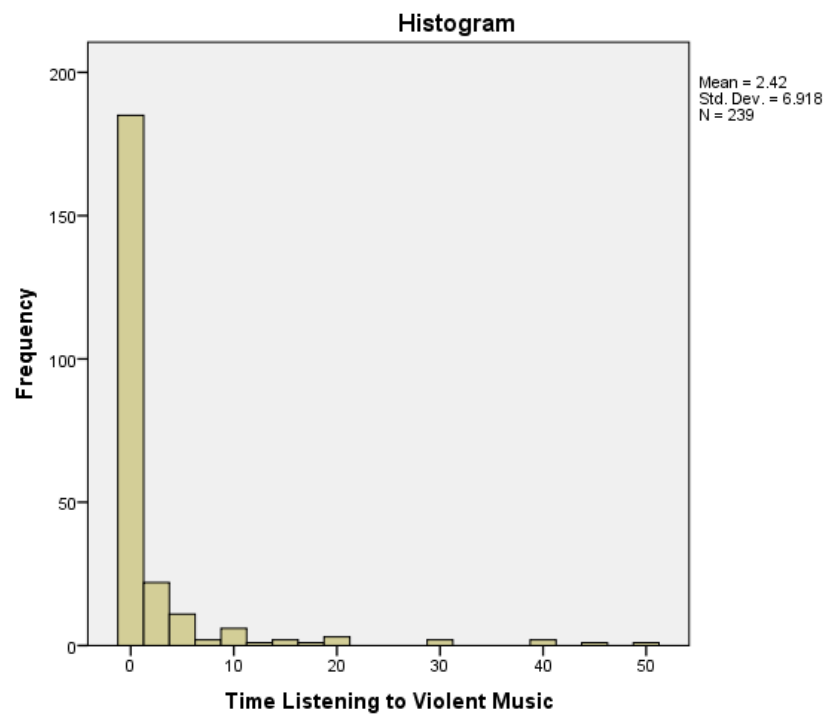
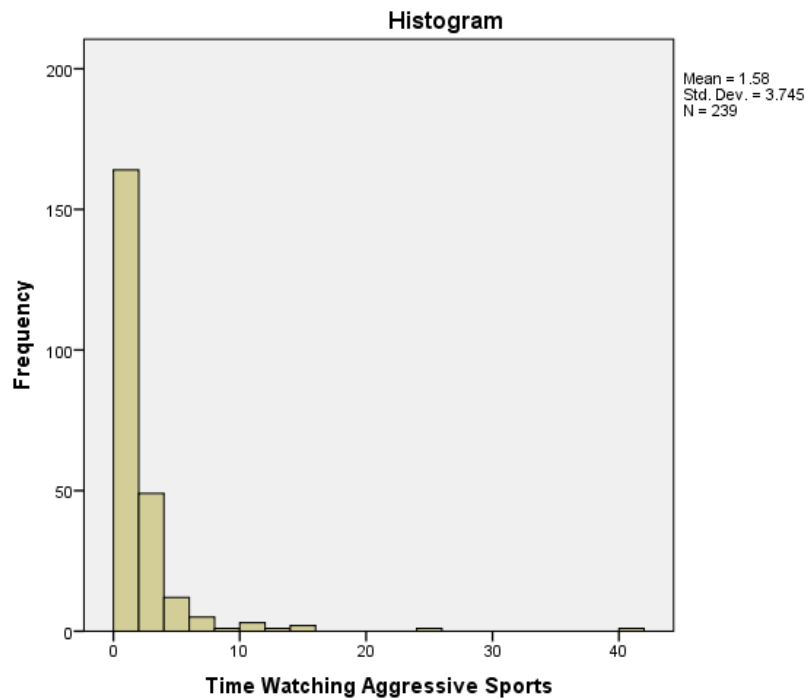
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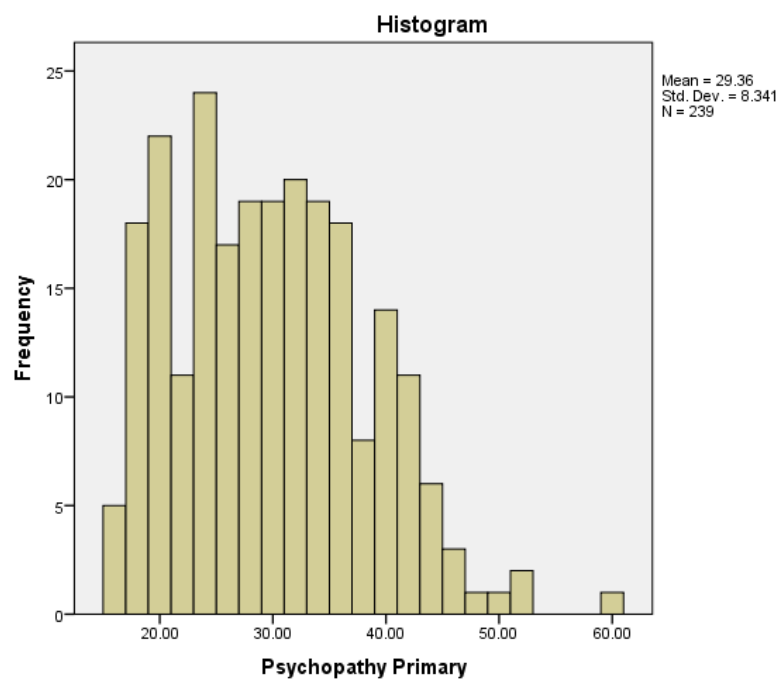
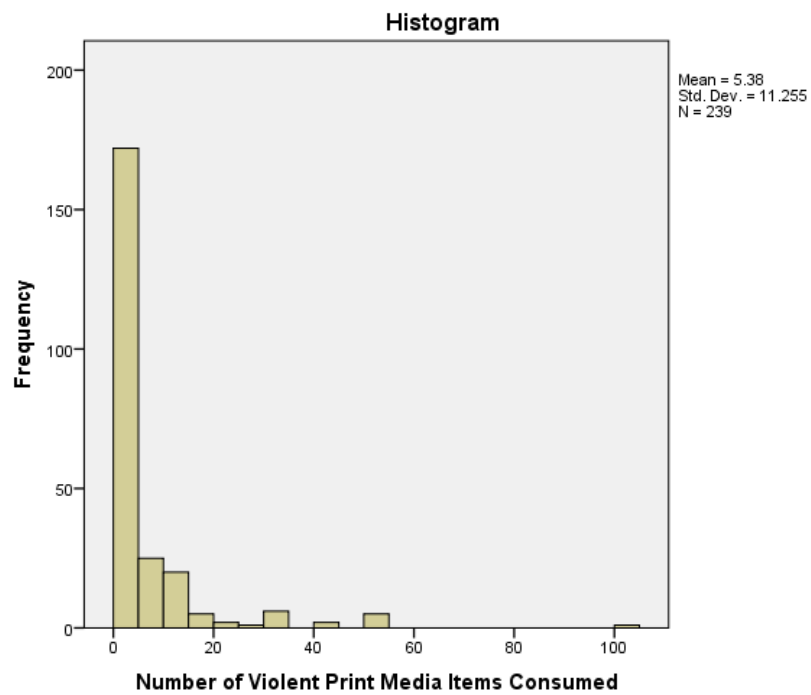
By pressing 'next', you are giving your consent to take part in this study.

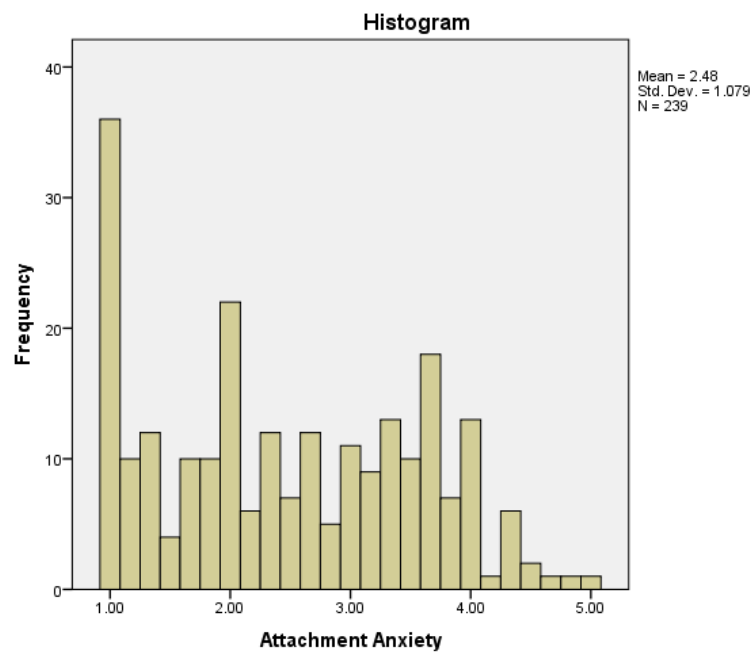
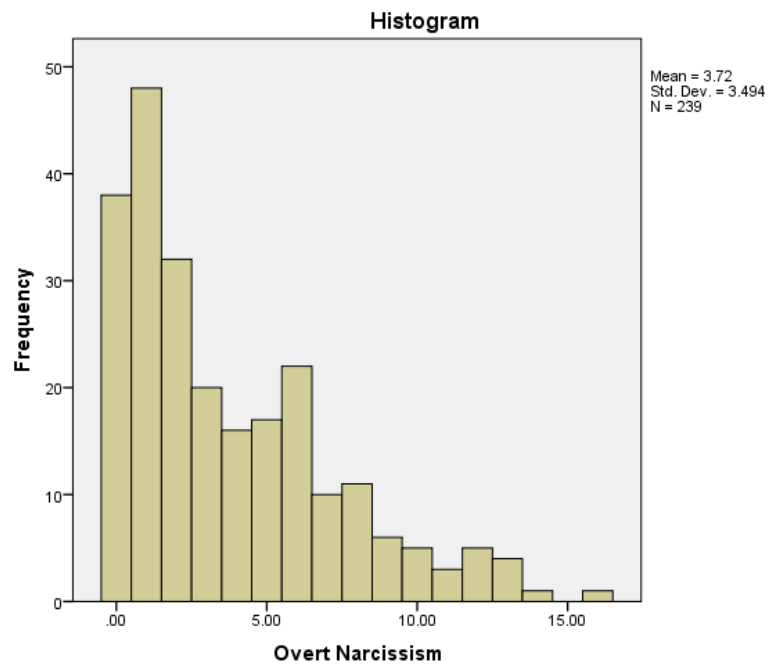
Appendix E – Study 1 Correlations Violated Assumptions

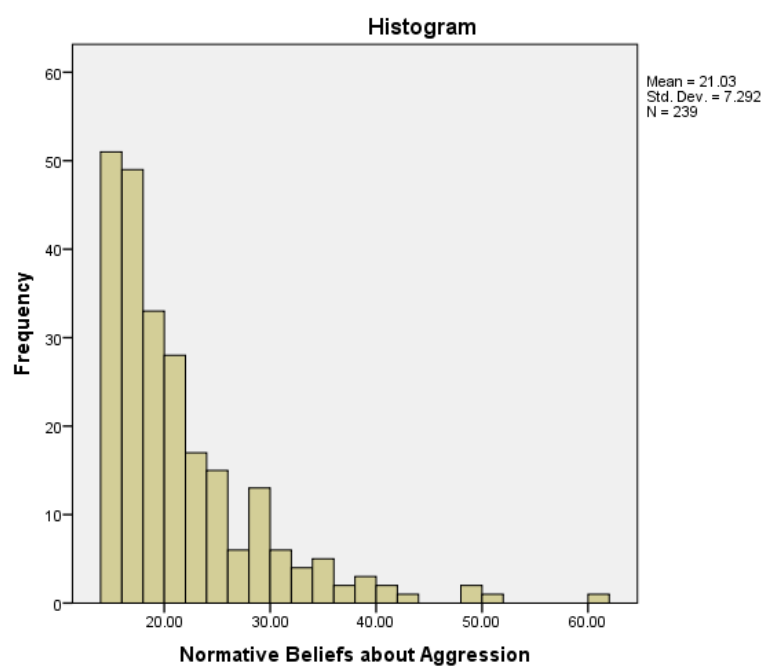
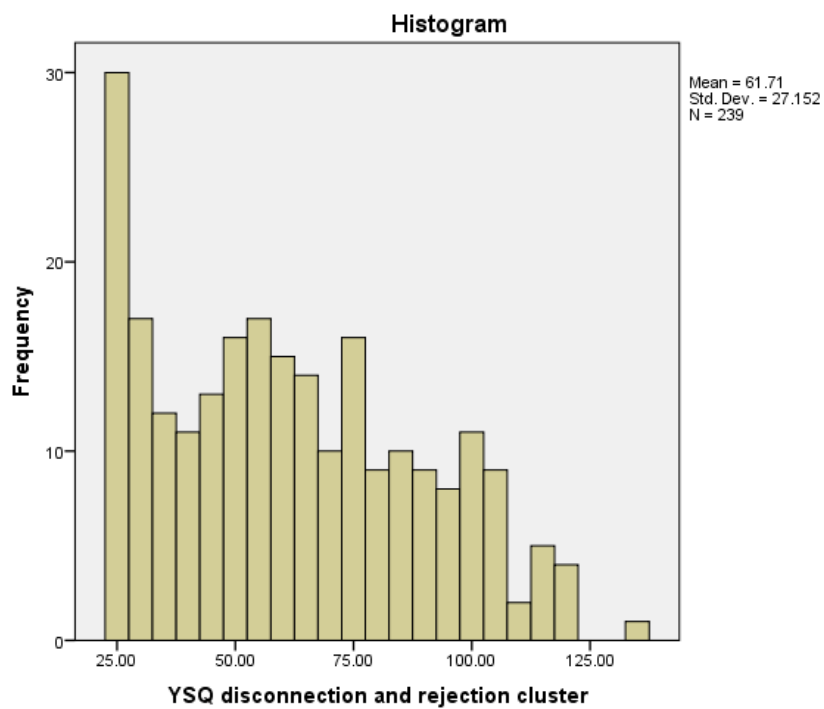
Below are the distributions for each non-normally distributed variable in the correlational analyses of study one. Clear patterns of skewness are apparent, especially on measures of violent media exposure. This demonstrates that for the correlational analyses, the assumption of normality was violated. But because correlations are robust to these violations, the raw variables were used in subsequent analyses.











Appendix F – Study 1 R^2

Below is the output obtained for R^2 change in all regression models for all trait aggression, and all four components of trait aggression.

Trait Aggression

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.845 ^a	.714	.687	11.80917	.714	25.844	21	217	.000
2	.845 ^b	.714	.688	11.78335	.000	.048	1	217	.828
3	.845 ^c	.714	.689	11.75899	.000	.096	1	218	.757
4	.845 ^d	.713	.690	11.74904	-.001	.628	1	219	.429
5	.844 ^e	.712	.690	11.74096	-.001	.696	1	220	.405
6	.843 ^f	.711	.690	11.73836	-.001	.902	1	221	.343
7	.843 ^g	.710	.691	11.73406	-.001	.836	1	222	.361
8	.842 ^h	.709	.690	11.74161	-.002	1.288	1	223	.258
9	.841 ⁱ	.707	.690	11.75037	-.002	1.336	1	224	.249
10	.839 ^j	.705	.689	11.76949	-.002	1.736	1	225	.189
11	.838 ^k	.702	.688	11.78476	-.002	1.589	1	226	.209
12	.837 ^l	.700	.687	11.80679	-.002	1.853	1	227	.175
13	.833 ^m	.694	.682	11.89598	-.006	4.473	1	228	.036
14	.830 ⁿ	.688	.677	11.98604	-.006	4.496	1	229	.035
15	.826 ^o	.682	.672	12.08511	-.007	4.834	1	230	.029
16	.819 ^p	.670	.662	12.27537	-.012	8.363	1	231	.004
17	.812 ^q	.660	.653	12.43198	-.010	6.983	1	232	.009
18	.804 ^r	.647	.641	12.63915	-.013	8.864	1	233	.003

Anger

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.724 ^a	.524	.487	4.43911	.524	14.370	17	222	.000
2	.724 ^b	.524	.490	4.43016	.000	.102	1	222	.750
3	.723 ^c	.523	.491	4.42248	.000	.224	1	223	.636
4	.722 ^d	.522	.492	4.41825	-.001	.570	1	224	.451
5	.721 ^e	.520	.493	4.41574	-.002	.743	1	225	.390
6	.720 ^f	.519	.493	4.41457	-.002	.880	1	226	.349
7	.719 ^g	.517	.494	4.41258	-.002	.794	1	227	.374
8	.718 ^h	.515	.494	4.41102	-.002	.839	1	228	.361
9	.716 ⁱ	.513	.494	4.41255	-.002	1.159	1	229	.283
10	.714 ^j	.510	.493	4.41490	-.003	1.246	1	230	.265
11	.712 ^k	.506	.492	4.42114	-.004	1.657	1	231	.199
12	.709 ^l	.503	.490	4.42606	-.003	1.519	1	232	.219
13	.704 ^m	.495	.485	4.45162	-.008	3.710	1	233	.055

Physical Aggression**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.763 ^a	.582	.542	5.17941	.582	14.448	21	218	.000
2	.763 ^b	.582	.544	5.16764	.000	.006	1	218	.938
3	.763 ^c	.582	.546	5.15643	.000	.046	1	219	.830
4	.763 ^d	.582	.548	5.14566	.000	.078	1	220	.780
5	.762 ^e	.581	.549	5.13676	.000	.232	1	221	.630
6	.762 ^f	.580	.550	5.13230	-.001	.613	1	222	.434
7	.761 ^g	.579	.550	5.12912	-.001	.722	1	223	.396
8	.760 ^h	.577	.551	5.12652	-.001	.772	1	224	.380
9	.759 ⁱ	.576	.552	5.12217	-.001	.617	1	225	.433
10	.758 ^j	.575	.552	5.11774	-.001	.608	1	226	.437
11	.757 ^k	.573	.553	5.11540	-.001	.792	1	227	.375
12	.755 ^l	.570	.551	5.12752	-.004	2.086	1	228	.150
13	.751 ^m	.565	.548	5.14549	-.005	2.615	1	229	.107
14	.748 ⁿ	.560	.545	5.16235	-.005	2.516	1	230	.114
15	.744 ^o	.553	.540	5.18891	-.006	3.393	1	231	.067
16	.738 ^p	.544	.532	5.23242	-.009	4.924	1	232	.027
17	.733 ^q	.538	.528	5.25786	-.006	3.281	1	233	.071
18	.721 ^r	.520	.512	5.34355	-.017	8.723	1	234	.003

Verbal Aggression**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.635 ^a	.404	.358	3.41205	.404	8.795	17	221	.000
2	.635 ^b	.404	.361	3.40436	.000	.000	1	221	.986
3	.635 ^c	.403	.363	3.39702	.000	.038	1	222	.845
4	.635 ^d	.403	.366	3.39032	.000	.117	1	223	.732
5	.634 ^e	.402	.368	3.38505	-.001	.302	1	224	.583
6	.633 ^f	.401	.369	3.38065	-.001	.413	1	225	.521
7	.633 ^g	.400	.371	3.37612	-.001	.392	1	226	.532
8	.630 ^h	.396	.370	3.37945	-.004	1.449	1	227	.230
9	.626 ⁱ	.392	.368	3.38551	-.005	1.822	1	228	.178
10	.622 ^j	.386	.365	3.39211	-.005	1.898	1	229	.170
11	.620 ^k	.384	.365	3.39191	-.003	.974	1	230	.325
12	.612 ^l	.374	.358	3.41074	-.010	3.582	1	231	.060
13	.602 ^m	.362	.349	3.43618	-.012	4.489	1	232	.035
14	.582 ⁿ	.339	.328	3.49054	-.023	8.463	1	233	.004
15	.572 ^o	.328	.319	3.51301	-.011	4.035	1	234	.046

Hostility**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.866 ^a	.751	.730	3.72250	.751	36.977	18	221	.000
2	.866 ^b	.751	.732	3.71415	.000	.005	1	221	.945
3	.866 ^c	.751	.733	3.70672	.000	.109	1	222	.741
4	.866 ^d	.750	.733	3.70517	-.001	.813	1	223	.368
5	.865 ^e	.749	.733	3.70344	-.001	.789	1	224	.375
6	.865 ^f	.748	.733	3.70312	-.001	.962	1	225	.328
7	.864 ^g	.746	.733	3.70649	-.002	1.413	1	226	.236
8	.862 ^h	.744	.731	3.71764	-.003	2.375	1	227	.125
9	.861 ⁱ	.741	.730	3.72462	-.002	1.861	1	228	.174
10	.859 ^j	.738	.728	3.74084	-.003	3.008	1	229	.084
11	.858 ^k	.736	.727	3.74904	-.002	2.014	1	230	.157
12	.854 ^l	.730	.721	3.78421	-.006	5.373	1	231	.021
13	.851 ^m	.725	.718	3.80909	-.005	4.073	1	232	.045
14	.847 ⁿ	.717	.711	3.85414	-.008	6.568	1	233	.011
15	.841 ^o	.708	.703	3.91020	-.010	7.886	1	234	.005

Appendix G – Study 1 Model Summaries

Below is the output obtained for all model summary statistics (including collinearity tolerance and variance inflation values) in all regression models with verbal aggression as the dependent variable.

Trait Aggression

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-34.855	11.733	-2.971	.003	-57.981	-11.729					
	male	1.861	1.744	.044	1.067	1.577	5.299	.172	.072	.039	.779	1.285
	SES_EDUC What is the highest level of education you have completed?	-.827	.574	-.059	-1.441	1.959	.304	-.152	-.097	-.052	.790	1.266
	SES_INCOME What is your total household income (before tax is taken out)?	-.150	.521	-.012	-.287	1.177	.877	-.160	-.020	-.010	.796	1.256
	YSQ_impaired_limits_cluster	-.030	.137	-.012	-.218	.299	.239	.568	-.015	-.008	.408	2.453
	YSQ impaired limits cluster											
	YSQ_cluster_disconn_reject											
	YSQ disconnection and rejection cluster	.203	.056	.261	3.632	.093	.313	.620	.239	.132	.254	3.938
	AASanxiety_subscale AAS anxiety subscale total score	-1.337	1.148	-.068	-1.164	3.599	.926	.446	-.079	-.042	.382	2.618

AASdepend_subscale AAS depend subscale total score	-.987	1.330	-.046	-.742	.459	-3.609	1.634	-.468	-.050	-.027	.340	2.945
AASclose_subscale AAS closeness subscale total score	1.383	1.234	.062	1.121	.264	-1.049	3.816	-.332	.076	.041	.424	2.356
GHQ_total General Health Questionnaire 12 total score	.211	.213	.044	.990	.323	-.209	.631	.412	.067	.036	.652	1.533
NOBAGS_total2	.466	.142	.161	3.286	.001	.186	.745	.517	.218	.119	.548	1.823
HIM_total Honor Ideology for Manhood scale total score	.121	.035	.166	3.409	.001	.051	.190	.396	.225	.124	.555	1.801
ATVS_total Attitudes towards violence scale total score	-.117	.062	-.090	-1.898	.059	-.239	.005	.261	-.128	-.069	.584	1.711
HSNS_total HSNS total score	.105	.075	.091	1.410	.160	-.042	.252	.620	.095	.051	.316	3.163
NPI16_total NPI total score	.945	.280	.156	3.372	.001	.393	1.497	.350	.223	.122	.612	1.635
Mach_total MACH total score	.173	.114	.090	1.514	.132	-.052	.398	.491	.102	.055	.373	2.679
Psychopathysecondary_total PSYCHOP secondary subscale total	1.822	.258	.427	7.058	.000	1.313	2.331	.695	.432	.256	.359	2.784
Psychopathyprimary_total PSYCHOP primary subscale total	-.537	.163	-.212	-3.301	.001	-.857	-.216	.494	-.219	-.120	.319	3.139
UPPS_total Impulsivity UPPS total score	.313	.067	.190	4.648	.000	.180	.446	.358	.301	.169	.790	1.266

2	Video_games Please give your best estimate: In an average week, how many hours would you spend playing video...	-.092	.098	-.038	-.945	.345	-.285	.100	.113	-.064	-.034	.808	1.237
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.118	.126	.039	.937	.350	-.130	.366	.239	.063	.034	.774	1.293
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.103	.073	.055	1.407	.161	-.041	.248	.115	.095	.051	.858	1.165
	(Constant)	-34.671	11.677		-2.969	.003	-57.686	-11.656					
	male	1.880	1.738	.044	1.082	.281	-1.546	5.306	.172	.073	.039	.781	1.281
	SES_EDUC What is the highest level of education you have completed?	-.822	.572	-.058	-1.435	.153	-1.950	.307	-.152	-.097	-.052	.792	1.263
	SES_INCOME What is your total household income (before tax is taken out)?	-.160	.518	-.013	-.309	.757	-1.180	.860	-.160	-.021	-.011	.803	1.246
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.203	.056	.261	3.634	.000	.093	.313	.620	.239	.132	.254	3.930
	AASanxiety_subscale AAS anxiety subscale total score	-1.376	1.131	-.070	-1.217	.225	-3.606	.853	.446	-.082	-.044	.392	2.552

AASdepend_subscale AAS depend subscale total score	-1.015	1.321	-.048	-.769	.443	-3.619	1.588	-.468	-.052	-.028	.343	2.917
AASclose_subscale AAS closeness subscale total score	1.377	1.231	.062	1.119	.265	-1.049	3.803	-.332	.076	.040	.425	2.355
GHQ_total General Health Questionnaire 12 total score	.205	.211	.043	.971	.333	-.211	.620	.412	.066	.035	.666	1.501
NOBAGS_total2	.463	.141	.160	3.288	.001	.185	.740	.517	.217	.119	.554	1.804
HIM_total Honor Ideology for Manhood scale total score	.120	.035	.165	3.409	.001	.051	.190	.396	.225	.123	.558	1.792
ATVS_total Attitudes towards violence scale total score	-.115	.061	-.088	-1.893	.060	-.234	.005	.261	-.127	-.069	.604	1.656
HSNS_total HSNS total score	.101	.072	.088	1.400	.163	-.041	.244	.620	.094	.051	.334	2.996
NPI16_total NPI total score	.931	.273	.154	3.414	.001	.394	1.469	.350	.225	.124	.642	1.557
Mach_total MACH total score	.172	.114	.089	1.508	.133	-.053	.396	.491	.102	.055	.374	2.672
Psychopathysecondary_total PSYCHOP secondary subscale total	1.809	.251	.424	7.208	.000	1.315	2.304	.695	.439	.261	.378	2.644
Psychopathyprimary_total PSYCHOP primary subscale total	-.538	.162	-.213	-3.319	.001	-.858	-.219	.494	-.219	-.120	.319	3.135
UPPS_total Impulsivity UPPS total score	.314	.067	.190	4.674	.000	.181	.446	.358	.302	.169	.792	1.263

3	Video_games Please give your best estimate: In an average week, how many hours would you spend playing video...	-.094	.097	-.039	-.962	.337	-.286	.098	.113	-.065	-.035	.811	1.233
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.113	.123	.037	.915	.361	-.130	.356	.239	.062	.033	.801	1.248
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.104	.073	.055	1.420	.157	-.040	.248	.115	.096	.051	.860	1.163
	(Constant)	-34.880	11.634		-2.998	.003	-57.808	-11.952					
	male	1.861	1.734	.044	1.074	.284	-1.555	5.278	.172	.072	.039	.782	1.279
	SES_EDUC What is the highest level of education you have completed?	-.871	.548	-.062	-1.590	.113	-1.952	.209	-.152	-.107	-.057	.860	1.163
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.206	.055	.265	3.771	.000	.098	.314	.620	.247	.136	.264	3.786
	AASanxiety_subscale AAS anxiety subscale total score	-1.390	1.128	-.071	-1.232	.219	-3.613	.833	.446	-.083	-.045	.392	2.549
	AASdepend_subscale AAS depend subscale total score	-1.042	1.315	-.049	-.792	.429	-3.634	1.550	-.468	-.053	-.029	.344	2.905

AASclose_subscale AAS closeness subscale total score	1.381	1.228	.062	1.125	.262	-1.040	3.802	-.332	.076	.041	.425	2.354
GHQ_total General Health Questionnaire 12 total score	.202	.210	.043	.963	.336	-.212	.616	.412	.065	.035	.667	1.500
NOBAGS_total2	.466	.140	.161	3.326	.001	.190	.742	.517	.219	.120	.557	1.795
HIM_total Honor Ideology for Manhood scale total score	.120	.035	.165	3.408	.001	.051	.189	.396	.224	.123	.558	1.791
ATVS_total Attitudes towards violence scale total score	-.116	.060	-.089	-1.923	.056	-.235	.003	.261	-.129	-.069	.607	1.648
HSNS_total HSNS total score	.099	.072	.086	1.381	.169	-.042	.241	.620	.093	.050	.336	2.973
NPI16_total NPI total score	.918	.269	.152	3.416	.001	.388	1.447	.350	.225	.123	.659	1.517
Mach_total MACH total score	.171	.114	.089	1.508	.133	-.053	.395	.491	.101	.054	.374	2.672
Psychopathysecondary_total PSYCHOP secondary subscale total	1.811	.250	.425	7.231	.000	1.317	2.305	.695	.439	.261	.378	2.643
Psychopathyprimary_total PSYCHOP primary subscale total	-.538	.162	-.212	-3.323	.001	-.856	-.219	.494	-.219	-.120	.319	3.134
UPPS_total Impulsivity UPPS total score	.314	.067	.190	4.693	.000	.182	.446	.358	.302	.170	.792	1.262

4	Video_games Please give your best estimate: In an average week, how many hours would you spend playing video...	-.095	.097	-.039	-.977	.329	-.286	.097	.113	-.066	-.035	.812	1.231
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.114	.123	.037	.926	.356	-.129	.356	.239	.062	.033	.802	1.247
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.105	.073	.056	1.440	.151	-.039	.249	.115	.097	.052	.862	1.160
	(Constant)	-38.278	10.805		-3.543	.000	-59.572	-16.984					
	male	1.694	1.719	.040	.985	.326	-1.694	5.082	.172	.066	.036	.793	1.260
	SES_EDUC What is the highest level of education you have completed?	-.876	.548	-.062	-1.600	.111	-1.956	.203	-.152	-.107	-.058	.860	1.163
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.212	.054	.273	3.935	.000	.106	.319	.620	.256	.142	.270	3.703
	AASanxiety_subscale AAS anxiety subscale total score	-1.260	1.115	-.064	-1.130	.260	-3.457	.938	.446	-.076	-.041	.401	2.494
	AASclose_subscale AAS closeness subscale total score	.874	1.047	.039	.834	.405	-1.190	2.937	-.332	.056	.030	.584	1.713

GHQ_total General Health Questionnaire 12 total score	.211	.210	.044	1.005	.316	-.202	.624	.412	.068	.036	.668	1.496
NOBAGS_total2	.453	.139	.157	3.260	.001	.179	.727	.517	.215	.118	.564	1.772
HIM_total Honor Ideology for Manhood scale total score	.122	.035	.168	3.483	.001	.053	.191	.396	.229	.126	.562	1.780
ATVS_total Attitudes towards violence scale total score	-.122	.060	-.094	-2.033	.043	-.240	-.004	.261	-.136	-.073	.615	1.625
HSNS_total HSNS total score	.104	.072	.090	1.455	.147	-.037	.245	.620	.098	.053	.339	2.952
NPI16_total NPI total score	.936	.267	.155	3.500	.001	.409	1.463	.350	.230	.126	.664	1.506
Mach_total MACH total score	.187	.112	.097	1.679	.095	-.033	.407	.491	.112	.061	.387	2.586
Psychopathysecondary_total PSYCHOP secondary subscale total	1.823	.250	.427	7.296	.000	1.330	2.315	.695	.441	.263	.380	2.633
Psychopathyprimary_total PSYCHOP primary subscale total	-.551	.161	-.218	-3.427	.001	-.868	-.234	.494	-.225	-.124	.323	3.100
UPPS_total Impulsivity UPPS total score	.317	.067	.192	4.753	.000	.186	.449	.358	.305	.172	.795	1.257
Video_games Please give your best estimate: In an average week, how many hours would you spend playing video...	-.095	.097	-.039	-.978	.329	-.286	.096	.113	-.066	-.035	.812	1.231

5	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.124	.122	.041	1.014	.312	-.117	.365	.239	.068	.037	.810	1.234
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.102	.073	.055	1.407	.161	-.041	.246	.115	.094	.051	.864	1.158
	(Constant)	-34.096	9.565		-3.565	.000	-52.946	-15.245					
	male	1.659	1.717	.039	.966	.335	-1.726	5.044	.172	.065	.035	.794	1.260
	SES_EDUC What is the highest level of education you have completed?	-.973	.535	-.069	-1.819	.070	-2.027	.081	-.152	-.121	-.066	.900	1.111
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.202	.052	.260	3.849	.000	.099	.306	.620	.251	.139	.285	3.508
	AASanxiety_subscale AAS anxiety subscale total score	-1.384	1.104	-.071	-1.254	.211	-3.560	.792	.446	-.084	-.045	.408	2.450
	GHQ_total General Health Questionnaire 12 total score	.227	.208	.048	1.091	.276	-.183	.638	.412	.073	.039	.675	1.482
	NOBAGS_total2	.454	.139	.157	3.270	.001	.180	.728	.517	.215	.118	.564	1.772
	HIM_total Honor Ideology for Manhood scale total score	.120	.035	.165	3.434	.001	.051	.189	.396	.225	.124	.565	1.771
	ATVS_total Attitudes towards violence scale total score	-.123	.060	-.095	-2.057	.041	-.241	-.005	.261	-.137	-.074	.616	1.624

HSNS_total HSNS total score	.096	.071	.083	1.358	.176	-.043	.236	.620	.091	.049	.345	2.901
NPI16_total NPI total score	.954	.266	.158	3.580	.000	.429	1.479	.350	.234	.129	.668	1.496
Mach_total MACH total score	.194	.111	.101	1.748	.082	-.025	.413	.491	.117	.063	.389	2.571
Psychopathysecondary_total PSYCHOP secondary subscale total	1.797	.248	.421	7.253	.000	1.309	2.286	.695	.438	.262	.385	2.595
Psychopathyprimary_total PSYCHOP primary subscale total	-.549	.161	-.217	-3.418	.001	-.866	-.232	.494	-.224	-.123	.323	3.099
UPPS_total Impulsivity UPPS total score	.322	.067	.195	4.836	.000	.191	.453	.358	.309	.174	.800	1.250
Video_games Please give your best estimate: In an average week, how many hours would you spend playing video...	-.092	.097	-.038	-.950	.343	-.283	.099	.113	-.064	-.034	.813	1.230
Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.127	.122	.042	1.037	.301	-.114	.367	.239	.070	.037	.811	1.233
Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.098	.073	.052	1.354	.177	-.045	.241	.115	.091	.049	.868	1.152
6 (Constant)	-34.973	9.518		-3.674	.000	-53.731	-16.215					

male	1.568	1.714	.037	.915	.361	-1.811	4.947	.172	.061	.033	.796	1.256
SES_EDUC What is the highest level of education you have completed?	-.919	.532	-.065	-1.727	.085	-1.966	.129	-.152	-.115	-.062	.910	1.098
YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.193	.052	.249	3.742	.000	.092	.295	.620	.244	.135	.294	3.403
AASanxiety_subscale AAS anxiety subscale total score	-1.382	1.104	-.071	-1.252	.212	-3.558	.793	.446	-.084	-.045	.408	2.450
GHQ_total General Health Questionnaire 12 total score	.228	.208	.048	1.093	.276	-.183	.639	.412	.073	.039	.675	1.482
NOBAGS_total2	.450	.139	.155	3.240	.001	.176	.723	.517	.212	.117	.565	1.770
HIM_total Honor Ideology for Manhood scale total score	.115	.035	.159	3.337	.001	.047	.184	.396	.219	.120	.575	1.739
ATVS_total Attitudes towards violence scale total score	-.124	.060	-.095	-2.074	.039	-.242	-.006	.261	-.138	-.075	.616	1.623
HSNS_total HSNS total score	.099	.071	.086	1.398	.164	-.041	.239	.620	.093	.050	.345	2.896
NPI16_total NPI total score	.973	.266	.161	3.664	.000	.450	1.497	.350	.239	.132	.672	1.487
Mach_total MACH total score	.222	.107	.115	2.067	.040	.010	.433	.491	.137	.075	.417	2.397
Psychopathysecondary_total PSYCHOP secondary subscale total	1.810	.247	.424	7.315	.000	1.322	2.298	.695	.441	.264	.386	2.588
Psychopathyprimary_total PSYCHOP primary subscale total	-.583	.157	-.231	-3.726	.000	-.892	-.275	.494	-.243	-.134	.340	2.944

7	UPPS_total Impulsivity	.325	.066	.197	4.886	.000	.194	.456	.358	.312	.176	.802	1.247
	UPPS total score												
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.130	.122	.043	1.066	.288	-.111	.371	.239	.071	.038	.812	1.232
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.096	.073	.051	1.325	.187	-.047	.239	.115	.089	.048	.869	1.151
	(Constant)	-34.783	9.513		-3.657	.000	-53.530	-16.037					
	SES_EDUC What is the highest level of education you have completed?	-.913	.532	-.065	-1.718	.087	-1.961	.134	-.152	-.114	-.062	.910	1.098
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.199	.051	.257	3.889	.000	.098	.300	.620	.252	.140	.299	3.350
	AASanxiety_subscale AAS anxiety subscale total score	-1.349	1.103	-.069	-1.223	.222	-3.522	.824	.446	-.082	-.044	.409	2.447
	GHQ_total General Health Questionnaire 12 total score	.236	.208	.050	1.135	.258	-.174	.646	.412	.076	.041	.676	1.479
	NOBAGS_total2	.465	.138	.161	3.378	.001	.194	.737	.517	.221	.122	.573	1.744
	HIM_total Honor Ideology for Manhood scale total score	.125	.033	.171	3.774	.000	.060	.190	.396	.245	.136	.629	1.589
	ATVS_total Attitudes towards violence scale total score	-.132	.059	-.102	-2.240	.026	-.249	-.016	.261	-.148	-.081	.631	1.585

8	HSNS_total HSNS total score	.085	.069	.073	1.226	.222	-.051	.221	.620	.082	.044	.363	2.754
	NPI16_total NPI total score	.962	.265	.159	3.627	.000	.439	1.484	.350	.236	.131	.674	1.484
	Mach_total MACH total score	.225	.107	.117	2.100	.037	.014	.436	.491	.139	.076	.418	2.394
	Psychopathysecondary_total PSYCHOP secondary subscale total	1.787	.246	.419	7.263	.000	1.302	2.272	.695	.437	.262	.390	2.561
	Psychopathyprimary_total PSYCHOP primary subscale total	-.565	.155	-.223	-3.640	.000	-.871	-.259	.494	-.237	-.131	.345	2.896
	UPPS_total Impulsivity UPPS total score	.323	.066	.196	4.872	.000	.193	.454	.358	.310	.176	.802	1.247
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.147	.121	.048	1.220	.224	-.091	.385	.239	.081	.044	.831	1.203
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.090	.072	.048	1.244	.215	-.052	.232	.115	.083	.045	.877	1.141
	(Constant)	-30.281	8.652		-3.500	.001	-47.330	-13.232					
	SES_EDUC What is the highest level of education you have completed?	-.919	.532	-.065	-1.728	.085	-1.967	.129	-.152	-.115	-.062	.911	1.098

YSQ_cluster_disconn_reject												
YSQ disconnection and rejection cluster	.211	.050	.271	4.182	.000	.111	.310	.620	.269	.151	.310	3.226
AASanxiety_subscale AAS anxiety subscale total score	-1.308	1.103	-.067	-1.186	.237	-3.481	.866	.446	-.079	-.043	.409	2.444
NOBAGS_total2	.472	.138	.163	3.430	.001	.201	.744	.517	.223	.124	.575	1.740
HIM_total Honor Ideology for Manhood scale total score	.121	.033	.167	3.682	.000	.056	.186	.396	.239	.133	.635	1.575
ATVS_total Attitudes towards violence scale total score	-.128	.059	-.099	-2.175	.031	-.245	-.012	.261	-.144	-.078	.633	1.580
HSNS_total HSNS total score	.094	.069	.081	1.371	.172	-.041	.229	.620	.091	.049	.368	2.714
NPI16_total NPI total score	1.017	.261	.168	3.897	.000	.503	1.531	.350	.252	.141	.697	1.435
Mach_total MACH total score	.196	.104	.102	1.880	.061	-.009	.401	.491	.125	.068	.444	2.253
Psychopathysecondary_total PSYCHOP secondary subscale total	1.833	.243	.430	7.546	.000	1.354	2.311	.695	.450	.272	.401	2.492
Psychopathyprimary_total PSYCHOP primary subscale total	-.563	.155	-.223	-3.626	.000	-.869	-.257	.494	-.235	-.131	.345	2.896
UPPS_total Impulsivity UPPS total score	.325	.066	.197	4.889	.000	.194	.456	.358	.310	.176	.802	1.246
Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.139	.120	.046	1.156	.249	-.098	.377	.239	.077	.042	.834	1.199

9	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.098	.072	.052	1.370	.172	-.043	.240	.115	.091	.049	.886	1.128
	(Constant)	-31.393	8.604		-3.648	.000	-48.348	-14.437					
	SES_EDUC What is the highest level of education you have completed?	-.939	.532	-.067	-1.765	.079	-1.987	.109	-.152	-.117	-.064	.912	1.097
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.213	.050	.274	4.224	.000	.113	.312	.620	.271	.152	.310	3.222
	AASanxiety_subscale AAS anxiety subscale total score	-1.446	1.097	-.074	-1.318	.189	-3.608	.716	.446	-.088	-.048	.414	2.416
	NOBAGS_total2	.455	.137	.157	3.323	.001	.185	.725	.517	.216	.120	.581	1.721
	HIM_total Honor Ideology for Manhood scale total score	.119	.033	.164	3.630	.000	.055	.184	.396	.235	.131	.636	1.571
	ATVS_total Attitudes towards violence scale total score	-.124	.059	-.095	-2.101	.037	-.240	-.008	.261	-.139	-.076	.636	1.573
	HSNS_total HSNS total score	.103	.068	.089	1.504	.134	-.032	.237	.620	.100	.054	.373	2.682
	NPI16_total NPI total score	1.030	.261	.171	3.947	.000	.516	1.544	.350	.254	.142	.698	1.432
	Mach_total MACH total score	.174	.103	.091	1.701	.090	-.028	.376	.491	.113	.061	.458	2.182
	Psychopathysecondary_total PSYCHOP secondary subscale total	1.860	.242	.436	7.692	.000	1.384	2.337	.695	.456	.278	.405	2.468

10	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.531	.153	-.210	-3.472	.001	-.832	-.230	.494	-.226	-.125	.357	2.803
	UPPS_total Impulsivity												
	UPPS total score	.335	.066	.203	5.083	.000	.205	.465	.358	.321	.184	.817	1.224
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...												
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.108	.071	.057	1.508	.133	-.033	.248	.115	.100	.054	.898	1.114
	(Constant)	-32.770	8.555		-3.831	.000	-49.627	-15.913					
	SES_EDUC What is the highest level of education you have completed?												
	SES_EDUC What is the highest level of education you have completed?	-1.029	.528	-.073	-1.946	.053	-2.070	.013	-.152	-.128	-.070	.927	1.079
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.179	.043	.230	4.122	.000	.093	.264	.620	.264	.149	.419	2.385
	NOBAGS_total2	.436	.136	.151	3.194	.002	.167	.705	.517	.208	.115	.588	1.700
	HIM_total Honor Ideology for Manhood scale total score	.117	.033	.161	3.549	.000	.052	.182	.396	.230	.128	.639	1.565
	ATVS_total Attitudes towards violence scale total score	-.124	.059	-.095	-2.104	.036	-.240	-.008	.261	-.139	-.076	.636	1.573
	HSNS_total HSNS total score	.084	.067	.073	1.261	.209	-.048	.216	.620	.084	.046	.389	2.571
	NPI16_total NPI total score	1.050	.261	.174	4.024	.000	.536	1.564	.350	.259	.146	.701	1.427
	Mach_total MACH total score	.193	.102	.101	1.904	.058	-.007	.394	.491	.126	.069	.468	2.138

11	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	1.827	.241	.428	7.583	.000	1.352	2.301	.695	.450	.274	.410	2.440
	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.515	.153	-.204	-3.374	.001	-.816	-.214	.494	-.219	-.122	.359	2.785
	UPPS_total Impulsivity												
	UPPS total score	.345	.066	.209	5.268	.000	.216	.474	.358	.331	.190	.828	1.207
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...												
	(Constant)	.104	.071	.056	1.458	.146	-.037	.245	.115	.096	.053	.899	1.113
	SES_EDUC What is the highest level of education you have completed?	-33.383	8.552		-3.904	.000	-50.234	-16.532					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	-1.091	.527	-.078	-2.071	.039	-2.129	-.053	-.152	-.136	-.075	.935	1.070
	NOBAGS_total2	.206	.038	.265	5.443	.000	.131	.280	.620	.340	.197	.553	1.807
	HIM_total Honor Ideology for Manhood scale total score	.443	.136	.153	3.243	.001	.174	.712	.517	.210	.117	.589	1.698
	ATVS_total Attitudes towards violence scale total score	.119	.033	.164	3.636	.000	.055	.184	.396	.235	.132	.642	1.559
	NPI16_total NPI total score	-.126	.059	-.097	-2.126	.035	-.242	-.009	.261	-.140	-.077	.636	1.572
		1.035	.261	.171	3.965	.000	.520	1.549	.350	.255	.144	.702	1.424

	Mach_total MACH total score	.218	.100	.113	2.176	.031	.021	.414	.491	.143	.079	.485	2.063
	Psychopathysecondary_total PSYCHOP secondary subscale total	1.898	.235	.445	8.091	.000	1.435	2.360	.695	.473	.293	.433	2.307
	Psychopathyprimary_total PSYCHOP primary subscale total	-.520	.153	-.206	-3.402	.001	-.821	-.219	.494	-.220	-.123	.359	2.784
	UPPS_total Impulsivity UPPS total score	.360	.065	.218	5.572	.000	.233	.487	.358	.347	.202	.855	1.169
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.097	.071	.052	1.361	.175	-.043	.238	.115	.090	.049	.904	1.106
	(Constant)	-32.957	8.562		-3.849	.000	-49.828	-16.086					
	SES_EDUC What is the highest level of education you have completed?	-1.116	.527	-.079	-2.115	.036	-2.155	-.076	-.152	-.139	-.077	.936	1.068
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.211	.038	.271	5.580	.000	.136	.285	.620	.347	.202	.558	1.792
12	NOBAGS_total2	.475	.135	.164	3.528	.001	.210	.740	.517	.228	.128	.608	1.646
	HIM_total Honor Ideology for Manhood scale total score	.119	.033	.163	3.603	.000	.054	.183	.396	.232	.131	.642	1.558
	ATVS_total Attitudes towards violence scale total score	-.141	.058	-.108	-2.415	.017	-.255	-.026	.261	-.158	-.088	.659	1.518

13	NPI16_total NPI total score	1.028	.261	.170	3.935	.000	.513	1.543	.350	.252	.143	.702	1.424
	Mach_total MACH total score	.227	.100	.118	2.273	.024	.030	.424	.491	.149	.082	.487	2.053
	Psychopathysecondary_total PSYCHOP secondary subscale total	1.855	.233	.435	7.966	.000	1.396	2.314	.695	.467	.289	.441	2.266
	Psychopathyprimary_total PSYCHOP primary subscale total	-.509	.153	-.201	-3.328	.001	-.810	-.208	.494	-.215	-.121	.360	2.776
	UPPS_total Impulsivity UPPS total score	.359	.065	.218	5.552	.000	.232	.487	.358	.345	.201	.855	1.169
	(Constant)	-40.545	7.833		-5.176	.000	-55.979	-25.112					
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.210	.038	.271	5.531	.000	.135	.285	.620	.343	.202	.558	1.792
	NOBAGS_total2	.471	.136	.163	3.470	.001	.203	.738	.517	.223	.127	.608	1.646
	HIM_total Honor Ideology for Manhood scale total score	.126	.033	.173	3.808	.000	.061	.191	.396	.244	.139	.649	1.542
	ATVS_total Attitudes towards violence scale total score	-.128	.058	-.098	-2.192	.029	-.243	-.013	.261	-.143	-.080	.666	1.502
	NPI16_total NPI total score	.989	.263	.164	3.764	.000	.471	1.506	.350	.241	.138	.706	1.416
	Mach_total MACH total score	.213	.100	.111	2.120	.035	.015	.411	.491	.139	.077	.489	2.044
	Psychopathysecondary_total PSYCHOP secondary subscale total	1.887	.234	.442	8.058	.000	1.425	2.348	.695	.470	.294	.443	2.257

14	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.516	.154	-.204	-3.351	.001	-.819	-.213	.494	-.216	-.122	.360	2.774
	UPPS_total Impulsivity	.373	.065	.226	5.751	.000	.245	.501	.358	.355	.210	.864	1.157
	UPPS total score												
	(Constant)	-34.291	7.311		-4.690	.000	-48.697	-19.886					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.231	.037	.298	6.253	.000	.158	.304	.620	.381	.230	.599	1.670
	NOBAGS_total2	.498	.136	.172	3.663	.000	.230	.766	.517	.235	.135	.613	1.630
	HIM_total Honor Ideology for Manhood scale total score	.125	.033	.172	3.771	.000	.060	.191	.396	.241	.139	.649	1.542
	ATVS_total Attitudes towards violence scale total score	-.129	.059	-.099	-2.199	.029	-.245	-.013	.261	-.143	-.081	.666	1.502
	NPI16_total NPI total score	.941	.264	.156	3.568	.000	.421	1.460	.350	.229	.131	.711	1.406
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	1.912	.236	.448	8.114	.000	1.448	2.376	.695	.472	.299	.444	2.251
15	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.371	.139	-.147	-2.668	.008	-.645	-.097	.494	-.173	-.098	.449	2.225
	UPPS_total Impulsivity	.361	.065	.219	5.549	.000	.233	.490	.358	.344	.204	.870	1.149
	UPPS total score												
	(Constant)	-35.383	7.354		-4.811	.000	-49.873	-20.893					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.234	.037	.301	6.287	.000	.161	.308	.620	.382	.233	.600	1.668

	NOBAGS_total2	.458	.136	.158	3.369	.001	.190	.726	.517	.216	.125	.625	1.601
	HIM_total Honor Ideology for												
	Manhood scale total score	.095	.031	.131	3.121	.002	.035	.156	.396	.201	.116	.779	1.284
	NPI16_total NPI total score	.940	.266	.156	3.534	.000	.416	1.463	.350	.227	.131	.711	1.406
	Psychopathysecondary_total												
	PSYCHOP secondary	1.887	.237	.442	7.951	.000	1.419	2.354	.695	.464	.295	.445	2.246
	subscale total												
	Psychopathyprimary_total												
	PSYCHOP primary subscale	-.403	.139	-.159	-2.892	.004	-.677	-.128	.494	-.187	-.107	.454	2.201
	total												
	UPPS_total Impulsivity												
	UPPS total score	.357	.066	.216	5.441	.000	.228	.486	.358	.337	.202	.871	1.148
	(Constant)	-37.248	7.441		-5.005	.000	-51.910	-22.587					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and	.222	.038	.286	5.913	.000	.148	.297	.620	.362	.223	.607	1.648
	rejection cluster												
	NOBAGS_total2	.356	.133	.123	2.671	.008	.094	.619	.517	.173	.101	.670	1.493
	HIM_total Honor Ideology for												
16	Manhood scale total score	.081	.031	.111	2.643	.009	.021	.141	.396	.171	.100	.800	1.250
	NPI16_total NPI total score	.696	.256	.115	2.717	.007	.191	1.200	.350	.176	.102	.791	1.264
	Psychopathysecondary_total												
	PSYCHOP secondary	1.648	.226	.386	7.292	.000	1.203	2.093	.695	.432	.275	.507	1.974
	subscale total												
	UPPS_total Impulsivity												
	UPPS total score	.350	.067	.212	5.253	.000	.219	.481	.358	.326	.198	.872	1.146
17	(Constant)	-38.874	7.511		-5.176	.000	-53.672	-24.077					

18	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.220	.038	.283	5.778	.000	.145	.295	.620	.354	.221	.607	1.647
	NOBAGS_total2	.399	.134	.138	2.977	.003	.135	.663	.517	.191	.114	.680	1.471
	NPI16_total NPI total score	.828	.254	.137	3.255	.001	.327	1.329	.350	.209	.124	.822	1.216
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	1.727	.227	.405	7.616	.000	1.280	2.174	.695	.446	.291	.516	1.939
	UPPS_total Impulsivity												
	UPPS total score	.386	.066	.234	5.842	.000	.256	.516	.358	.357	.223	.910	1.099
	(Constant)	-36.925	7.607		-4.854	.000	-51.911	-21.938					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.225	.039	.290	5.824	.000	.149	.301	.620	.356	.226	.609	1.643
	NPI16_total NPI total score	1.040	.248	.172	4.188	.000	.551	1.529	.350	.264	.163	.892	1.121
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	1.977	.214	.464	9.230	.000	1.555	2.399	.695	.517	.358	.598	1.673
	UPPS_total Impulsivity												
	UPPS total score	.391	.067	.237	5.832	.000	.259	.524	.358	.356	.226	.911	1.098

a. Dependent Variable: aggression_total AQ total score

Anger**Coefficients^a**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-15.259	4.386		-3.479	.001	-23.903	-6.614					
	SES_EDUC What is the highest level of education you have completed?	-.091	.206	-.022	-.441	.660	-.496	.314	-.110	-.030	-.020	.864	1.158
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.053	.051	-.075	-1.043	.298	-.152	.047	.436	-.070	-.048	.418	2.392
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.018	.020	.077	.877	.382	-.022	.057	.451	.059	.041	.279	3.582
	AASanxiety_subscale AAS anxiety subscale total score	-.137	.430	-.024	-.319	.750	-.985	.710	.354	-.021	-.015	.384	2.601
	AASdepend_subscale AAS depend subscale total score	.938	.495	.149	1.896	.059	-.037	1.913	-.320	.126	.088	.347	2.884
	AASclose_subscale AAS closeness subscale total score	-.389	.461	-.060	-.844	.400	-1.297	.519	-.277	-.057	-.039	.430	2.327
	GHQ_total General Health Questionnaire 12 total score	.128	.079	.092	1.615	.108	-.028	.285	.371	.108	.075	.665	1.504
	NOBAGS_total2	.090	.052	.106	1.738	.084	-.012	.193	.384	.116	.080	.577	1.733

2	HIM_total Honor Ideology for Manhood scale total score	.014	.012	.067	1.139	.256	-.010	.039	.252	.076	.053	.621	1.610
	ATVS_total Attitudes towards violence scale total score	-.020	.022	-.053	-.914	.362	-.064	.024	.208	-.061	-.042	.629	1.591
	HSNS_total HSNS total score	.059	.027	.174	2.180	.030	.006	.112	.513	.145	.101	.338	2.963
	NPI16_total NPI total score	.305	.104	.172	2.941	.004	.101	.510	.244	.194	.136	.628	1.591
	Mach_total MACH total score	.052	.041	.091	1.263	.208	-.029	.132	.323	.084	.058	.412	2.424
	Psychopathysecondary_total PSYCHOP secondary subscale total	.745	.096	.594	7.797	.000	.557	.934	.617	.464	.361	.370	2.704
	Psychopathyprimary_total PSYCHOP primary subscale total	-.282	.059	-.379	-4.787	.000	-.398	-.166	.298	-.306	-.222	.343	2.919
	UPPS_total Impulsivity UPPS total score	.089	.025	.183	3.513	.001	.039	.139	.284	.230	.163	.790	1.266
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.058	.046	.065	1.266	.207	-.032	.149	.197	.085	.059	.817	1.224
	(Constant)	-15.517	4.302		-3.607	.000	-23.995	-7.039					
	SES_EDUC What is the highest level of education you have completed?	-.097	.204	-.023	-.473	.636	-.499	.306	-.110	-.032	-.022	.871	1.148

YSQ_impaired_limits_cluster	-.055	.050	-.078	-1.109	.269	-.154	.043	.436	-.074	-.051	.428	2.335
YSQ impaired limits cluster												
YSQ_cluster_disconn_reject												
YSQ disconnection and rejection cluster	.015	.018	.065	.819	.414	-.021	.051	.451	.055	.038	.335	2.984
AASdepend_subscale AAS depend subscale total score	.962	.488	.153	1.972	.050	.000	1.924	-.320	.131	.091	.355	2.817
AASclose_subscale AAS closeness subscale total score	-.382	.459	-.059	-.831	.407	-1.287	.523	-.277	-.056	-.038	.431	2.321
GHQ_total General Health Questionnaire 12 total score	.128	.079	.091	1.611	.109	-.028	.284	.371	.107	.074	.665	1.503
NOBAGS_total2	.089	.052	.104	1.717	.087	-.013	.190	.384	.114	.079	.583	1.714
HIM_total Honor Ideology for Manhood scale total score	.014	.012	.066	1.130	.260	-.010	.038	.252	.075	.052	.622	1.608
ATVS_total Attitudes towards violence scale total score	-.021	.022	-.054	-.929	.354	-.065	.023	.208	-.062	-.043	.630	1.588
HSNS_total HSNS total score	.058	.027	.171	2.161	.032	.005	.111	.513	.143	.100	.343	2.919
NPI16_total NPI total score	.308	.103	.174	2.991	.003	.105	.511	.244	.196	.138	.634	1.577
Mach_total MACH total score	.054	.040	.095	1.330	.185	-.026	.133	.323	.089	.061	.422	2.368
Psychopathysecondary_total PSYCHOP secondary subscale total	.744	.095	.593	7.806	.000	.556	.932	.617	.463	.361	.370	2.701

	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.281	.059	-.378	-4.787	.000	-.397	-.165	.298	-.305	-.221	.343	2.913
	UPPS_total Impulsivity												
	UPPS total score	.090	.025	.185	3.563	.000	.040	.139	.284	.232	.165	.796	1.256
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...												
		.060	.045	.067	1.322	.188	-.029	.150	.197	.088	.061	.831	1.203
	(Constant)	-16.327	3.940		-4.143	.000	-24.092	-8.562					
	YSQ_impaired_limits_cluster												
	YSQ impaired limits cluster	-.055	.050	-.078	-1.107	.269	-.153	.043	.436	-.074	-.051	.428	2.335
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.015	.018	.066	.834	.405	-.021	.051	.451	.056	.038	.335	2.982
	AASdepend_subscale AAS depend subscale total score												
		.963	.487	.153	1.976	.049	.003	1.923	-.320	.131	.091	.355	2.817
3	AASclose_subscale AAS closeness subscale total score												
		-.340	.450	-.052	-.755	.451	-1.226	.547	-.277	-.050	-.035	.448	2.235
	GHQ_total General Health Questionnaire 12 total score												
		.127	.079	.091	1.610	.109	-.029	.283	.371	.107	.074	.665	1.503
	NOBAGS_total2												
		.088	.051	.104	1.716	.087	-.013	.190	.384	.114	.079	.583	1.714
	HIM_total Honor Ideology for Manhood scale total score												
		.015	.012	.070	1.197	.232	-.010	.039	.252	.080	.055	.631	1.585
	ATVS_total Attitudes towards violence scale total score												
		-.020	.022	-.051	-.888	.376	-.063	.024	.208	-.059	-.041	.636	1.572

4	HSNS_total HSNS total score	.059	.027	.175	2.234	.026	.007	.112	.513	.148	.103	.347	2.881
	NPI16_total NPI total score	.304	.102	.171	2.966	.003	.102	.506	.244	.194	.137	.639	1.564
	Mach_total MACH total score	.052	.040	.092	1.298	.196	-.027	.131	.323	.086	.060	.425	2.352
	Psychopathysecondary_total PSYCHOP secondary subscale total	.747	.095	.595	7.859	.000	.560	.934	.617	.465	.363	.371	2.692
	Psychopathyprimary_total PSYCHOP primary subscale total	-.282	.059	-.379	-4.818	.000	-.397	-.167	.298	-.306	-.222	.344	2.909
	UPPS_total Impulsivity UPPS total score	.090	.025	.186	3.599	.000	.041	.139	.284	.234	.166	.798	1.253
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.061	.045	.068	1.347	.179	-.028	.150	.197	.090	.062	.833	1.201
	(Constant)	-16.652	3.913		-4.255	.000	-24.363	-8.940					
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.056	.050	-.079	-1.126	.261	-.154	.042	.436	-.075	-.052	.429	2.333
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.017	.018	.076	.972	.332	-.018	.053	.451	.065	.045	.345	2.902
	AASdepend_subscale AAS depend subscale total score	.765	.411	.122	1.863	.064	-.044	1.575	-.320	.123	.086	.498	2.007
	GHQ_total General Health Questionnaire 12 total score	.122	.079	.087	1.549	.123	-.033	.277	.371	.103	.071	.671	1.490
	NOBAGS_total2	.092	.051	.107	1.788	.075	-.009	.193	.384	.118	.082	.588	1.702

5	HIM_total Honor Ideology for Manhood scale total score	.015	.012	.070	1.215	.226	-.009	.039	.252	.081	.056	.631	1.584
	ATVS_total Attitudes towards violence scale total score	-.019	.022	-.050	-.862	.390	-.063	.024	.208	-.057	-.040	.637	1.570
	HSNS_total HSNS total score	.060	.026	.177	2.263	.025	.008	.112	.513	.149	.104	.348	2.878
	NPI16_total NPI total score	.297	.102	.167	2.910	.004	.096	.497	.244	.190	.134	.645	1.550
	Mach_total MACH total score	.048	.040	.084	1.205	.229	-.030	.126	.323	.080	.056	.434	2.305
	Psychopathysecondary_total PSYCHOP secondary subscale total	.751	.095	.598	7.919	.000	.564	.938	.617	.467	.365	.373	2.684
	Psychopathyprimary_total PSYCHOP primary subscale total	-.279	.058	-.376	-4.786	.000	-.394	-.164	.298	-.304	-.221	.345	2.898
	UPPS_total Impulsivity UPPS total score	.088	.025	.181	3.539	.000	.039	.137	.284	.230	.163	.809	1.236
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.059	.045	.065	1.300	.195	-.030	.148	.197	.086	.060	.837	1.195
	(Constant)	-16.608	3.911		-4.247	.000	-24.314	-8.902					
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.049	.049	-.069	-1.001	.318	-.146	.048	.436	-.066	-.046	.440	2.273
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.017	.018	.076	.962	.337	-.018	.053	.451	.064	.044	.345	2.901

	AASdepend_subscale AAS depend subscale total score	.729	.408	.116	1.785	.076	-.076	1.533	-.320	.118	.082	.504	1.986
	GHQ_total General Health Questionnaire 12 total score	.118	.078	.084	1.498	.136	-.037	.272	.371	.099	.069	.674	1.484
	NOBAGS_total2	.085	.051	.100	1.683	.094	-.015	.185	.384	.111	.078	.600	1.667
	HIM_total Honor Ideology for Manhood scale total score	.010	.011	.049	.938	.349	-.011	.032	.252	.062	.043	.770	1.299
	HSNS_total HSNS total score	.059	.026	.173	2.219	.027	.007	.111	.513	.146	.102	.349	2.868
	NPI16_total NPI total score	.294	.102	.165	2.886	.004	.093	.494	.244	.189	.133	.646	1.548
	Mach_total MACH total score	.047	.040	.083	1.191	.235	-.031	.125	.323	.079	.055	.434	2.305
	Psychopathysecondary_total PSYCHOP secondary subscale total	.744	.094	.593	7.879	.000	.558	.930	.617	.464	.363	.375	2.665
	Psychopathyprimary_total PSYCHOP primary subscale total	-.284	.058	-.381	-4.875	.000	-.398	-.169	.298	-.308	-.225	.347	2.879
	UPPS_total Impulsivity UPPS total score	.088	.025	.181	3.535	.000	.039	.137	.284	.229	.163	.809	1.236
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.056	.045	.062	1.235	.218	-.033	.144	.197	.082	.057	.842	1.188
	(Constant)	-16.660	3.909		-4.262	.000	-24.363	-8.957					
6	YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.050	.049	-.070	-1.011	.313	-.146	.047	.436	-.067	-.047	.440	2.272

	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.016	.018	.070	.891	.374	-.019	.051	.451	.059	.041	.347	2.883
	AASdepend_subscale AAS depend subscale total score	.714	.408	.114	1.750	.081	-.090	1.518	-.320	.115	.081	.504	1.983
	GHQ_total General Health Questionnaire 12 total score	.112	.078	.080	1.431	.154	-.042	.266	.371	.095	.066	.678	1.476
	NOBAGS_total2	.089	.050	.105	1.769	.078	-.010	.189	.384	.117	.081	.604	1.656
	HSNS_total HSNS total score	.061	.026	.181	2.335	.020	.010	.113	.513	.153	.108	.353	2.835
	NPI16_total NPI total score	.307	.101	.173	3.040	.003	.108	.505	.244	.198	.140	.658	1.520
	Mach_total MACH total score	.046	.040	.081	1.158	.248	-.032	.124	.323	.077	.053	.434	2.302
	Psychopathysecondary_total PSYCHOP secondary subscale total	.748	.094	.596	7.931	.000	.562	.934	.617	.466	.365	.376	2.660
	Psychopathyprimary_total PSYCHOP primary subscale total	-.276	.058	-.371	-4.791	.000	-.389	-.162	.298	-.303	-.221	.355	2.819
	UPPS_total Impulsivity UPPS total score	.092	.024	.190	3.766	.000	.044	.140	.284	.243	.173	.836	1.196
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.055	.045	.061	1.218	.225	-.034	.143	.197	.081	.056	.842	1.187
	(Constant)	-16.520	3.904		-4.231	.000	-24.213	-8.826					
7	YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.045	.049	-.063	-.916	.361	-.141	.051	.436	-.061	-.042	.446	2.243

8	AASdepend_subscale AAS depend subscale total score	.578	.378	.092	1.529	.128	-.167	1.324	-.320	.101	.070	.586	1.706
	GHQ_total General Health Questionnaire 12 total score	.128	.076	.091	1.673	.096	-.023	.278	.371	.110	.077	.713	1.402
	NOBAGS_total2	.089	.050	.104	1.755	.081	-.011	.188	.384	.115	.081	.604	1.655
	HSNS_total HSNS total score	.068	.025	.200	2.679	.008	.018	.117	.513	.175	.123	.381	2.625
	NPI16_total NPI total score	.297	.100	.167	2.966	.003	.100	.495	.244	.193	.137	.665	1.504
	Mach_total MACH total score	.050	.039	.089	1.287	.200	-.027	.128	.323	.085	.059	.442	2.262
	Psychopathysecondary_total PSYCHOP secondary subscale total	.757	.094	.603	8.088	.000	.573	.942	.617	.472	.372	.381	2.626
	Psychopathyprimary_total PSYCHOP primary subscale total	-.274	.057	-.368	-4.763	.000	-.387	-.160	.298	-.301	-.219	.355	2.815
	UPPS_total Impulsivity UPPS total score	.092	.024	.189	3.757	.000	.044	.140	.284	.241	.173	.836	1.196
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.053	.045	.060	1.189	.236	-.035	.142	.197	.078	.055	.843	1.186
	(Constant)	-16.424	3.902		-4.209	.000	-24.111	-8.736					
	AASdepend_subscale AAS depend subscale total score	.562	.378	.089	1.487	.138	-.183	1.306	-.320	.098	.068	.587	1.702
	GHQ_total General Health Questionnaire 12 total score	.116	.075	.083	1.543	.124	-.032	.264	.371	.101	.071	.733	1.363
	NOBAGS_total2	.085	.050	.100	1.689	.093	-.014	.184	.384	.111	.078	.608	1.645

9	HSNS_total HSNS total score	.061	.024	.179	2.521	.012	.013	.108	.513	.164	.116	.420	2.379
	NPI16_total NPI total score	.277	.098	.156	2.835	.005	.084	.470	.244	.184	.130	.699	1.431
	Mach_total MACH total score	.050	.039	.088	1.278	.202	-.027	.127	.323	.084	.059	.442	2.262
	Psychopathysecondary_total PSYCHOP secondary subscale total	.736	.091	.586	8.119	.000	.557	.915	.617	.473	.374	.406	2.462
	Psychopathyprimary_total PSYCHOP primary subscale total	-.276	.057	-.371	-4.808	.000	-.389	-.163	.298	-.303	-.221	.356	2.810
	UPPS_total Impulsivity UPPS total score	.093	.024	.192	3.834	.000	.045	.141	.284	.246	.176	.841	1.189
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.048	.044	.053	1.077	.283	-.040	.136	.197	.071	.050	.859	1.165
	(Constant)	-16.777	3.889		-4.314	.000	-24.440	-9.114					
	AASdepend_subscale AAS depend subscale total score	.552	.378	.088	1.462	.145	-.192	1.297	-.320	.096	.067	.588	1.701
	GHQ_total General Health Questionnaire 12 total score	.112	.075	.080	1.491	.137	-.036	.260	.371	.098	.069	.735	1.360
	NOBAGS_total2	.080	.050	.094	1.600	.111	-.019	.179	.384	.105	.074	.613	1.632
	HSNS_total HSNS total score	.063	.024	.186	2.627	.009	.016	.110	.513	.171	.121	.424	2.359
	NPI16_total NPI total score	.282	.098	.159	2.883	.004	.089	.474	.244	.187	.133	.700	1.429
	Mach_total MACH total score	.043	.039	.076	1.116	.265	-.033	.119	.323	.073	.051	.454	2.200

	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.743	.090	.592	8.220	.000	.565	.922	.617	.477	.378	.408	2.448
	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.264	.056	-.355	-4.688	.000	-.375	-.153	.298	-.295	-.216	.369	2.711
	UPPS_total Impulsivity												
	UPPS total score	.097	.024	.201	4.044	.000	.050	.145	.284	.258	.186	.861	1.162
	(Constant)	-14.898	3.508		-4.247	.000	-21.809	-7.987					
	AASdepend_subscale AAS depend subscale total score	.485	.373	.077	1.301	.195	-.250	1.221	-.320	.085	.060	.603	1.659
	GHQ_total General Health Questionnaire 12 total score	.095	.073	.068	1.287	.199	-.050	.239	.371	.084	.059	.768	1.302
	NOBAGS_total2	.087	.050	.102	1.739	.083	-.012	.185	.384	.114	.080	.621	1.611
	HSNS_total HSNS total score	.069	.023	.205	2.982	.003	.024	.115	.513	.193	.137	.450	2.223
10	NPI16_total NPI total score	.276	.098	.155	2.823	.005	.083	.468	.244	.183	.130	.702	1.424
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.748	.090	.595	8.270	.000	.569	.926	.617	.478	.381	.409	2.444
	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.236	.051	-.318	-4.678	.000	-.336	-.137	.298	-.294	-.215	.460	2.173
	UPPS_total Impulsivity												
	UPPS total score	.094	.024	.194	3.936	.000	.047	.141	.284	.251	.181	.873	1.145
	(Constant)	-13.262	3.274		-4.051	.000	-19.712	-6.812					
11	AASdepend_subscale AAS depend subscale total score	.460	.373	.073	1.232	.219	-.275	1.195	-.320	.081	.057	.605	1.654

	NOBAGS_total2	.090	.050	.105	1.804	.072	-.008	.188	.384	.118	.083	.622	1.607
	HSNS_total HSNS total score	.074	.023	.219	3.237	.001	.029	.120	.513	.208	.149	.463	2.161
	NPI16_total NPI total score	.296	.096	.167	3.076	.002	.107	.486	.244	.198	.142	.722	1.384
	Psychopathysecondary_total PSYCHOP secondary subscale total	.770	.089	.613	8.661	.000	.595	.945	.617	.494	.399	.425	2.355
	Psychopathyprimary_total PSYCHOP primary subscale total	-.243	.050	-.327	-4.830	.000	-.342	-.144	.298	-.302	-.223	.465	2.150
	UPPS_total Impulsivity UPPS total score	.094	.024	.195	3.946	.000	.047	.142	.284	.251	.182	.873	1.145
	(Constant)	-10.938	2.679		-4.083	.000	-16.216	-5.659					
	NOBAGS_total2	.096	.050	.112	1.926	.055	-.002	.193	.384	.125	.089	.628	1.593
	HSNS_total HSNS total score	.062	.021	.184	2.995	.003	.021	.103	.513	.193	.138	.567	1.763
	NPI16_total NPI total score	.295	.096	.166	3.054	.003	.105	.485	.244	.196	.141	.722	1.384
12	Psychopathysecondary_total PSYCHOP secondary subscale total	.744	.087	.593	8.600	.000	.574	.915	.617	.491	.397	.449	2.229
	Psychopathyprimary_total PSYCHOP primary subscale total	-.240	.050	-.322	-4.767	.000	-.339	-.141	.298	-.298	-.220	.466	2.144
	UPPS_total Impulsivity UPPS total score	.096	.024	.197	3.989	.000	.048	.143	.284	.253	.184	.875	1.143
13	(Constant)	-10.602	2.689		-3.943	.000	-15.899	-5.305					

HSNS_total HSNS total score	.064	.021	.190	3.088	.002	.023	.106	.513	.198	.143	.569	1.758
NPI16_total NPI total score	.324	.096	.182	3.383	.001	.135	.513	.244	.216	.157	.741	1.349
Psychopathysecondary_total PSYCHOP secondary subscale total	.780	.085	.621	9.166	.000	.612	.947	.617	.514	.426	.470	2.128
Psychopathyprimary_total PSYCHOP primary subscale total	-.214	.049	-.287	-4.387	.000	-.310	-.118	.298	-.276	-.204	.503	1.989
UPPS_total Impulsivity UPPS total score	.096	.024	.197	3.968	.000	.048	.143	.284	.251	.184	.875	1.143

a. Dependent Variable: anger_aggression_subscale AQ anger aggression subscale total

Verbal Aggression

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.012	3.135	.004	.997	-6.167	6.191					
	male	.577	.495	.067	1.165	.245	1.553	.116	.078	.061	.806	1.240
	YSQ_impaired_limits_cluster	.085	.039	.174	2.190	.030	.161	.450	.146	.114	.425	2.351
	YSQ impaired limits cluster											
	YSQ_cluster_disconn_reject	.005	.016	.035	.351	.726	-.025	.036	.355	.024	.018	.273
	YSQ disconnection and rejection cluster											
	AASanxiety_subscale AAS anxiety subscale total score	-.476	.330	-.121	-1.444	.150	-1.126	.174	.238	-.097	-.075	.386
	AASdepend_subscale AAS depend subscale total score	-.670	.380	-.155	-1.762	.080	-1.419	.080	-.327	-.118	-.092	.347
	AASclose_subscale AAS closeness subscale total score	.248	.349	.055	.709	.479	-.441	.936	-.204	.048	.037	.442
	GHQ_total General Health Questionnaire 12 total score	-.045	.061	-.047	-.735	.463	-.166	.076	.233	-.049	-.038	.659
	NOBAGS_total2	.050	.040	.085	1.238	.217	-.029	.129	.369	.083	.064	.571
	HIM_total Honor Ideology for Manhood scale total score	.002	.009	.012	.196	.844	-.016	.020	.242	.013	.010	.708

2	HSNS_total HSNS total score	.000	.021	-.002	-.018	.986	-.042	.042	.379	-.001	-.001	.323	3.098
	NPI16_total NPI total score	.294	.079	.241	3.701	.000	.137	.451	.358	.242	.192	.635	1.576
	Mach_total MACH total score	.058	.032	.148	1.820	.070	-.005	.120	.371	.121	.095	.406	2.462
	Psychopathysecondary_total PSYCHOP secondary subscale total	.307	.074	.357	4.142	.000	.161	.453	.473	.268	.215	.363	2.753
	Psychopathyprimary_total PSYCHOP primary subscale total	-.145	.046	-.284	-3.179	.002	-.235	-.055	.334	-.209	-.165	.339	2.952
	UPPS_total Impulsivity UPPS total score	.058	.019	.175	2.998	.003	.020	.096	.274	.198	.156	.794	1.260
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	-.020	.036	-.032	-.546	.586	-.090	.051	.146	-.037	-.028	.791	1.264
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.039	.021	.104	1.902	.058	-.001	.080	.121	.127	.099	.905	1.105
	(Constant)	.014	3.127		.004	.997	-6.149	6.176					
	male	.579	.484	.068	1.195	.233	-.376	1.534	.116	.080	.062	.839	1.192
YSQ_impaired_limits_cluster YSQ impaired limits cluster	.084	.037	.174	2.259	.025	.011	.158	.450	.150	.117	.452	2.211	

YSQ_cluster_disconn_reject												
YSQ disconnection and rejection cluster	.005	.015	.034	.357	.722	-.024	.035	.355	.024	.018	.289	3.465
AASanxiety_subscale AAS anxiety subscale total score	-.477	.327	-.121	-1.459	.146	-1.121	.167	.238	-.097	-.076	.392	2.552
AASdepend_subscale AAS depend subscale total score	-.669	.377	-.155	-1.774	.077	-1.412	.074	-.327	-.118	-.092	.351	2.847
AASclose_subscale AAS closeness subscale total score	.248	.348	.055	.713	.477	-.438	.934	-.204	.048	.037	.443	2.256
GHQ_total General Health Questionnaire 12 total score	-.045	.061	-.047	-.741	.459	-.165	.075	.233	-.050	-.038	.665	1.504
NOBAGS_total2	.050	.040	.085	1.241	.216	-.029	.129	.369	.083	.064	.572	1.750
HIM_total Honor Ideology for Manhood scale total score	.002	.009	.012	.196	.845	-.016	.019	.242	.013	.010	.717	1.395
NPI16_total NPI total score	.294	.079	.242	3.742	.000	.139	.449	.358	.244	.194	.645	1.551
Mach_total MACH total score	.057	.031	.148	1.861	.064	-.003	.118	.371	.124	.096	.425	2.355
Psychopathysecondary_total PSYCHOP secondary subscale total	.307	.074	.357	4.160	.000	.162	.453	.473	.269	.216	.365	2.741
Psychopathyprimary_total PSYCHOP primary subscale total	-.145	.045	-.284	-3.186	.002	-.234	-.055	.334	-.209	-.165	.339	2.952
UPPS_total Impulsivity UPPS total score	.058	.019	.175	3.053	.003	.021	.096	.274	.201	.158	.821	1.218

3	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	-.020	.036	-.032	-.551	.582	-.090	.051	.146	-.037	-.029	.798	1.254
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.039	.020	.104	1.920	.056	-.001	.080	.121	.128	.100	.916	1.092
	(Constant)	.009	3.120		.003	.998	-6.140	6.158					
	male	.602	.469	.070	1.282	.201	-.323	1.526	.116	.086	.066	.890	1.123
	YSQ_impaired_limits_cluster	.085	.037	.175	2.273	.024	.011	.158	.450	.150	.118	.453	2.208
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.005	.015	.033	.343	.732	-.024	.035	.355	.023	.018	.291	3.442
	AASanxiety_subscale AAS anxiety subscale total score	-.474	.326	-.120	-1.456	.147	-1.116	.168	.238	-.097	-.075	.392	2.548
	AASdepend_subscale AAS depend subscale total score	-.672	.376	-.156	-1.789	.075	-1.413	.068	-.327	-.119	-.093	.352	2.842
	AASclose_subscale AAS closeness subscale total score	.246	.347	.055	.708	.479	-.438	.930	-.204	.047	.037	.444	2.254
	GHQ_total General Health Questionnaire 12 total score	-.046	.061	-.048	-.758	.449	-.165	.074	.233	-.051	-.039	.668	1.497
	NOBAGS_total2	.050	.040	.086	1.257	.210	-.028	.129	.369	.084	.065	.574	1.743
	NPI16_total NPI total score	.296	.078	.243	3.808	.000	.143	.450	.358	.247	.197	.656	1.524

4	Mach_total MACH total score	.057	.031	.148	1.862	.064	-.003	.118	.371	.124	.096	.425	2.355
	Psychopathysecondary_total PSYCHOP secondary subscale total	.308	.074	.358	4.189	.000	.163	.453	.473	.270	.217	.366	2.730
	Psychopathyprimary_total PSYCHOP primary subscale total	-.144	.045	-.282	-3.193	.002	-.232	-.055	.334	-.209	-.165	.344	2.905
	UPPS_total Impulsivity UPPS total score	.059	.019	.177	3.168	.002	.022	.096	.274	.208	.164	.858	1.166
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	-.020	.036	-.032	-.562	.575	-.090	.050	.146	-.038	-.029	.799	1.251
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.039	.020	.103	1.915	.057	-.001	.079	.121	.127	.099	.922	1.085
	(Constant)	-.049	3.110		-.016	.987	-6.177	6.078					
	male	.614	.467	.072	1.314	.190	-.307	1.534	.116	.087	.068	.895	1.117
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	.086	.037	.177	2.320	.021	.013	.159	.450	.153	.120	.457	2.188
	AASanxiety_subscale AAS anxiety subscale total score	-.426	.293	-.108	-1.454	.147	-1.003	.151	.238	-.097	-.075	.484	2.068
	AASdepend_subscale AAS depend subscale total score	-.696	.369	-.161	-1.886	.061	-1.423	.031	-.327	-.125	-.097	.364	2.748

5	AASclose_subscale AAS closeness subscale total score	.232	.344	.052	.674	.501	-.446	.910	-.204	.045	.035	.450	2.222
	GHQ_total General Health Questionnaire 12 total score	-.041	.059	-.043	-.701	.484	-.158	.075	.233	-.047	-.036	.702	1.424
	NOBAGS_total2	.049	.040	.084	1.237	.218	-.029	.127	.369	.082	.064	.577	1.732
	NPI16_total NPI total score	.294	.077	.242	3.801	.000	.142	.447	.358	.246	.196	.660	1.516
	Mach_total MACH total score	.060	.030	.154	2.010	.046	.001	.119	.371	.133	.104	.452	2.214
	Psychopathysecondary_total PSYCHOP secondary subscale total	.311	.073	.361	4.263	.000	.167	.455	.473	.274	.220	.371	2.695
	Psychopathyprimary_total PSYCHOP primary subscale total	-.143	.045	-.281	-3.195	.002	-.232	-.055	.334	-.209	-.165	.344	2.904
	UPPS_total Impulsivity UPPS total score	.059	.018	.179	3.218	.001	.023	.096	.274	.210	.166	.865	1.157
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	-.020	.036	-.032	-.549	.583	-.089	.050	.146	-.037	-.028	.801	1.249
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.039	.020	.104	1.934	.054	-.001	.079	.121	.128	.100	.923	1.083
	(Constant)	.026	3.102		.008	.993	-6.087	6.138					
	male	.580	.462	.068	1.255	.211	-.331	1.491	.116	.083	.065	.911	1.098

YSQ_impaired_limits_cluster												
YSQ impaired limits cluster	.082	.036	.169	2.260	.025	.010	.154	.450	.149	.116	.475	2.106
AASanxiety_subscale AAS												
anxiety subscale total score	-.405	.290	-.103	-1.396	.164	-.976	.167	.238	-.093	-.072	.492	2.033
AASdepend_subscale AAS												
depend subscale total score	-.671	.366	-.156	-1.835	.068	-1.391	.049	-.327	-.121	-.095	.369	2.707
AASclose_subscale AAS												
closeness subscale total score	.220	.343	.049	.643	.521	-.455	.896	-.204	.043	.033	.452	2.214
GHQ_total General Health												
Questionnaire 12 total score	-.039	.059	-.041	-.667	.505	-.155	.077	.233	-.044	-.034	.705	1.418
NOBAGS_total2												
NPI16_total NPI total score	.051	.039	.088	1.304	.194	-.026	.129	.369	.087	.067	.584	1.713
Mach_total MACH total												
score	.295	.077	.242	3.816	.000	.143	.447	.358	.247	.197	.660	1.516
Psychopathysecondary_total												
PSYCHOP secondary subscale total	.063	.029	.162	2.154	.032	.005	.121	.371	.142	.111	.468	2.137
Psychopathyprimary_total												
PSYCHOP primary subscale total	.307	.073	.357	4.238	.000	.164	.450	.473	.272	.218	.374	2.674
UPPS_total Impulsivity												
UPPS total score	-.147	.044	-.289	-3.336	.001	-.235	-.060	.334	-.217	-.172	.354	2.825
Print_media Please give												
your best estimate: In the												
past month, how many	.058	.018	.174	3.176	.002	.022	.094	.274	.207	.164	.886	1.129
books or articles would you												
have read...	.038	.020	.101	1.886	.061	-.002	.078	.121	.125	.097	.935	1.069

6	(Constant)	.281	3.072		.091	.927	-5.773	6.334					
	male	.557	.460	.065	1.210	.228	-.350	1.464	.116	.080	.062	.916	1.091
	YSQ_impaired_limits_cluster	.083	.036	.170	2.283	.023	.011	.154	.450	.150	.118	.475	2.104
	YSQ impaired limits cluster												
	AASanxiety_subscale AAS	-.432	.287	-.109	-1.507	.133	-.996	.133	.238	-.100	-.078	.503	1.990
	anxiety subscale total score												
	AASdepend_subscale AAS	-.538	.301	-.125	-1.787	.075	-1.131	.055	-.327	-.118	-.092	.543	1.841
	depend subscale total score												
	GHQ_total General Health	-.037	.059	-.038	-.626	.532	-.152	.079	.233	-.042	-.032	.708	1.412
	Questionnaire 12 total score												
	NOBAGS_total2	.050	.039	.085	1.264	.208	-.028	.127	.369	.084	.065	.587	1.705
	NPI16_total NPI total score	.300	.077	.246	3.902	.000	.148	.451	.358	.251	.201	.666	1.501
	Mach_total MACH total	.065	.029	.167	2.227	.027	.007	.122	.371	.147	.115	.472	2.118
	score												
	Psychopathysecondary_total	.303	.072	.353	4.204	.000	.161	.446	.473	.269	.216	.377	2.655
	PSYCHOP secondary												
7	subscale total												
	Psychopathyprimary_total	-.149	.044	-.292	-3.376	.001	-.236	-.062	.334	-.219	-.174	.355	2.818
	PSYCHOP primary subscale												
	total												
	UPPS_total Impulsivity	.059	.018	.177	3.258	.001	.023	.095	.274	.212	.168	.894	1.119
	UPPS total score												
	Print_media Please give												
	your best estimate: In the												
	past month, how many	.037	.020	.099	1.858	.064	-.002	.077	.121	.123	.096	.938	1.066
	books or articles would you												
	have read...												
	(Constant)	-.422	2.856		-.148	.883	-6.049	5.205					

[illegible]

	AASanxiety_subscale AAS anxiety subscale total score	-.432	.283	-.110	-1.529	.128	-.990	.125	.238	-.101	-.079	.516	1.940
	AASdepend_subscale AAS depend subscale total score	-.501	.300	-.116	-1.674	.096	-1.092	.089	-.327	-.110	-.086	.548	1.824
	NOBAGS_total2	.053	.039	.090	1.350	.178	-.024	.130	.369	.089	.069	.591	1.692
	NPI16_total NPI total score	.296	.076	.243	3.878	.000	.146	.446	.358	.249	.200	.675	1.481
	Mach_total MACH total score	.068	.029	.174	2.367	.019	.011	.124	.371	.155	.122	.488	2.049
	Psychopathysecondary_total PSYCHOP secondary subscale total	.290	.071	.337	4.084	.000	.150	.430	.473	.261	.210	.389	2.571
	Psychopathyprimary_total PSYCHOP primary subscale total	-.140	.043	-.274	-3.215	.001	-.225	-.054	.334	-.208	-.165	.365	2.737
	UPPS_total Impulsivity UPPS total score	.059	.018	.177	3.259	.001	.023	.095	.274	.211	.168	.896	1.117
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.035	.020	.092	1.748	.082	-.004	.074	.121	.115	.090	.950	1.053
	(Constant)	-.828	2.854		-.290	.772	-6.451	4.795					
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	.080	.036	.165	2.252	.025	.010	.150	.450	.147	.116	.493	2.030
9	AASanxiety_subscale AAS anxiety subscale total score	-.388	.281	-.098	-1.378	.170	-.942	.167	.238	-.091	-.071	.523	1.913
	AASdepend_subscale AAS depend subscale total score	-.443	.297	-.103	-1.491	.137	-1.028	.142	-.327	-.098	-.077	.560	1.785

	NPI16_total NPI total score	.312	.075	.256	4.137	.000	.164	.461	.358	.264	.213	.692	1.444
	Mach_total MACH total score	.072	.028	.185	2.514	.013	.015	.128	.371	.164	.130	.493	2.028
	Psychopathysecondary_total PSYCHOP secondary subscale total	.309	.070	.359	4.428	.000	.171	.446	.473	.281	.228	.405	2.472
	Psychopathyprimary_total PSYCHOP primary subscale total	-.129	.043	-.253	-3.015	.003	-.213	-.045	.334	-.195	-.155	.378	2.647
	UPPS_total Impulsivity UPPS total score	.060	.018	.179	3.293	.001	.024	.095	.274	.213	.170	.896	1.116
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.039	.020	.102	1.944	.053	-.001	.078	.121	.127	.100	.967	1.034
	(Constant)	-2.005	2.728		-.735	.463	-7.381	3.371					
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	.067	.034	.137	1.942	.053	-.001	.134	.450	.127	.100	.534	1.873
	AASdepend_subscale AAS depend subscale total score	-.264	.268	-.061	-.987	.325	-.791	.263	-.327	-.065	-.051	.692	1.445
10	NPI16_total NPI total score	.325	.075	.267	4.336	.000	.177	.473	.358	.275	.224	.704	1.421
	Mach_total MACH total score	.073	.029	.188	2.558	.011	.017	.129	.371	.166	.132	.494	2.025
	Psychopathysecondary_total PSYCHOP secondary subscale total	.293	.069	.340	4.250	.000	.157	.429	.473	.270	.219	.416	2.404

11	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.128	.043	-.251	-2.984	.003	-.212	-.043	.334	-.193	-.154	.378	2.646
	UPPS_total Impulsivity	.061	.018	.184	3.372	.001	.025	.097	.274	.217	.174	.899	1.112
	UPPS total score												
	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.037	.020	.097	1.855	.065	-.002	.076	.121	.121	.096	.971	1.029
	(Constant)	-3.620	2.183		-1.658	.099	-7.921	.682					
	YSQ_impaired_limits_cluster	.070	.034	.144	2.053	.041	.003	.137	.450	.134	.106	.539	1.854
	YSQ impaired limits cluster												
	NPI16_total NPI total score	.323	.075	.265	4.303	.000	.175	.470	.358	.272	.222	.705	1.419
	Mach_total MACH total score	.079	.028	.205	2.862	.005	.025	.134	.371	.185	.148	.521	1.918
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.314	.065	.365	4.800	.000	.185	.443	.473	.301	.248	.461	2.168
	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.134	.042	-.263	-3.162	.002	-.218	-.051	.334	-.204	-.163	.386	2.590
	UPPS_total Impulsivity												
	UPPS total score	.062	.018	.187	3.447	.001	.027	.098	.274	.221	.178	.903	1.107

12	Print_media Please give your best estimate: In the past month, how many books or articles would you have read...	.037	.020	.099	1.893	.060	-.002	.077	.121	.124	.098	.973	1.028
	(Constant)	-3.593	2.195		-1.637	.103	-7.918	.732					
	YSQ_impaired_limits_cluster	.073	.034	.150	2.119	.035	.005	.140	.450	.138	.110	.540	1.851
	YSQ impaired limits cluster												
	NPI16_total NPI total score	.319	.075	.262	4.235	.000	.171	.468	.358	.268	.220	.705	1.419
	Mach_total MACH total score	.085	.028	.219	3.066	.002	.030	.140	.371	.197	.159	.527	1.896
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.303	.066	.352	4.626	.000	.174	.432	.473	.291	.240	.465	2.152
	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.131	.043	-.256	-3.067	.002	-.215	-.047	.334	-.197	-.159	.387	2.585
	UPPS_total Impulsivity												
	UPPS total score	.062	.018	.185	3.392	.001	.026	.097	.274	.217	.176	.904	1.106
13	(Constant)	-3.677	2.211		-1.663	.098	-8.033	.679					
	NPI16_total NPI total score	.354	.074	.291	4.784	.000	.208	.500	.358	.299	.250	.741	1.350
	Mach_total MACH total score	.089	.028	.230	3.205	.002	.034	.144	.371	.205	.168	.530	1.886
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.368	.058	.428	6.296	.000	.253	.483	.473	.381	.329	.594	1.685

	Psychopathyprimary_total												
	PSYCHOP primary subscale	-.125	.043	-.244	-2.909	.004	-.209	-.040	.334	-.187	-.152	.389	2.573
	total												
	UPPS_total Impulsivity	.063	.018	.190	3.457	.001	.027	.099	.274	.221	.181	.905	1.105
	UPPS total score												
	(Constant)	-3.009	2.234		-1.347	.179	-7.410	1.392					
	NPI16_total NPI total score	.269	.069	.221	3.893	.000	.133	.405	.358	.247	.207	.880	1.137
	Mach_total MACH total												
	score	.050	.025	.128	2.009	.046	.001	.098	.371	.130	.107	.698	1.432
14	Psychopathysecondary_total												
	PSYCHOP secondary	.301	.055	.349	5.515	.000	.193	.408	.473	.339	.293	.703	1.422
	subscale total												
	UPPS_total Impulsivity	.058	.018	.173	3.113	.002	.021	.094	.274	.199	.165	.916	1.092
	UPPS total score												
	(Constant)	-1.444	2.107		-.685	.494	-5.595	2.707					
	NPI16_total NPI total score	.286	.069	.235	4.154	.000	.151	.422	.358	.262	.222	.894	1.119
	Psychopathysecondary_total												
15	PSYCHOP secondary	.358	.047	.416	7.646	.000	.266	.450	.473	.446	.409	.967	1.034
	subscale total												
	UPPS_total Impulsivity	.057	.019	.171	3.058	.002	.020	.094	.274	.196	.164	.916	1.091
	UPPS total score												

a. Dependent Variable: verbal_aggression_subscale AQ verbal aggression subscale total

Physical Aggression**Coefficients^a**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	-14.859	5.144		-2.889	.004	-24.997	-4.720					
	male	1.884	.782	.123	2.408	.017	.342	3.426	.307	.161	.105	.740	1.351
	SES_EDUC What is the highest level of education you have completed?	-.204	.242	-.040	-.844	.400	-.681	.273	-.163	-.057	-.037	.850	1.177
	YSQ_impaired_limits_cluster	-.044	.059	-.050	-.736	.462	-.161	.073	.411	-.050	-.032	.413	2.424
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.061	.024	.216	2.523	.012	.013	.108	.410	.168	.110	.262	3.816
	AASanxiety_subscale AAS anxiety subscale total score	-.710	.503	-.100	-1.414	.159	-1.701	.280	.262	-.095	-.062	.383	2.609
	AASdepend_subscale AAS depend subscale total score	-.719	.583	-.093	-1.232	.219	-1.868	.431	-.294	-.083	-.054	.340	2.943
	AASclose_subscale AAS closeness subscale total score	1.038	.541	.129	1.918	.056	-.028	2.104	-.170	.129	.084	.425	2.355
	GHQ_total General Health Questionnaire 12 total score	.081	.093	.047	.866	.388	-.103	.265	.307	.059	.038	.655	1.527

NOBAGS_total2	.219	.061	.208	3.577	.000	.098	.339	.487	.235	.157	.566	1.766
HIM_total Honor Ideology for Manhood scale total score	.080	.015	.307	5.179	.000	.050	.111	.531	.331	.227	.545	1.835
ATVS_total Attitudes towards violence scale total score	-.026	.026	-.055	-.988	.324	-.078	.026	.337	-.067	-.043	.612	1.633
HSNS_total HSNS total score	-.016	.032	-.038	-.500	.617	-.079	.047	.406	-.034	-.022	.325	3.078
NPI16_total NPI total score	.235	.122	.107	1.921	.056	-.006	.476	.371	.129	.084	.616	1.623
Mach_total MACH total score	.009	.049	.013	.188	.851	-.088	.106	.360	.013	.008	.384	2.604
Psychopathysecondary_total PSYCHOP secondary subscale total	.487	.113	.314	4.291	.000	.263	.710	.522	.279	.188	.358	2.794
Psychopathyprimary_total PSYCHOP primary subscale total	-.094	.071	-.102	-1.325	.187	-.234	.046	.467	-.089	-.058	.321	3.113
UPPS_total Impulsivity UPPS total score	.110	.030	.184	3.697	.000	.051	.169	.377	.243	.162	.776	1.289
Video_games Please give your best estimate: In an average week, how many hours would you spend playing video...	-.003	.043	-.004	-.078	.938	-.088	.081	.178	-.005	-.003	.801	1.248

2	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.053	.055	.048	.962	.337	-.055	.161	.242	.065	.042	.775	1.290
	Sport Please give your best estimate: On average, how many hours per week would you watch televised spo...	.029	.106	.014	.268	.789	-.181	.238	.144	.018	.012	.711	1.407
	Movies_TV Please give your best estimate: On average, how many hours per week would you watch movies and/or...	.048	.076	.031	.634	.527	-.102	.199	.112	.043	.028	.787	1.271
	(Constant)	-14.881	5.124		-2.904	.004	-24.981	-4.782					
	male	1.880	.778	.122	2.415	.017	.345	3.414	.307	.161	.106	.745	1.343
	SES_EDUC What is the highest level of education you have completed?	-.202	.240	-.040	-.842	.401	-.675	.271	-.163	-.057	-.037	.858	1.165
	YSQ_impaired_limits_cluster	-.044	.059	-.050	-.743	.458	-.161	.073	.411	-.050	-.032	.414	2.418
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.061	.024	.215	2.549	.011	.014	.107	.410	.170	.111	.269	3.716
	AASanxiety_subscale AAS anxiety subscale total score	-.710	.501	-.100	-1.417	.158	-1.699	.278	.262	-.095	-.062	.383	2.609
	AASdepend_subscale AAS depend subscale total score	-.718	.582	-.093	-1.235	.218	-1.865	.428	-.294	-.083	-.054	.340	2.943

AASclose_subscale AAS closeness subscale total score	1.037	.540	.129	1.921	.056	-.027	2.100	-.170	.129	.084	.425	2.354
GHQ_total General Health Questionnaire 12 total score	.081	.093	.047	.868	.386	-.103	.264	.307	.059	.038	.655	1.526
NOBAGS_total2	.219	.061	.208	3.586	.000	.098	.339	.487	.235	.157	.567	1.762
HIM_total Honor Ideology for Manhood scale total score	.080	.015	.307	5.232	.000	.050	.110	.531	.333	.229	.556	1.798
ATVS_total Attitudes towards violence scale total score	-.026	.026	-.055	-.991	.323	-.078	.026	.337	-.067	-.043	.612	1.633
HSNS_total HSNS total score	-.016	.032	-.038	-.498	.619	-.079	.047	.406	-.034	-.022	.326	3.071
NPI16_total NPI total score	.236	.121	.108	1.941	.054	-.004	.475	.371	.130	.085	.621	1.609
Mach_total MACH total score	.010	.048	.015	.215	.830	-.084	.104	.360	.015	.009	.411	2.435
Psychopathysecondary_total PSYCHOP secondary subscale total	.487	.113	.314	4.311	.000	.264	.710	.522	.280	.188	.359	2.785
Psychopathyprimary_total PSYCHOP primary subscale total	-.095	.069	-.104	-1.372	.171	-.232	.041	.467	-.092	-.060	.335	2.983
UPPS_total Impulsivity UPPS total score	.110	.030	.184	3.709	.000	.052	.169	.377	.243	.162	.776	1.288
Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.053	.055	.048	.968	.334	-.055	.161	.242	.065	.042	.777	1.287

3	Sport Please give your best estimate: On average, how many hours per week would you watch televised sports?	.029	.106	.014	.277	.782	-.179	.237	.144	.019	.012	.717	1.395
	Movies_TV Please give your best estimate: On average, how many hours per week would you watch movies and/or TV shows?	.048	.076	.031	.631	.529	-.102	.198	.112	.043	.028	.795	1.258
	(Constant)	-14.515	4.823		-3.009	.003	-24.020	-5.009					
	male	1.887	.776	.123	2.433	.016	.358	3.416	.307	.162	.106	.746	1.340
	SES_EDUC What is the highest level of education you have completed?	-.197	.238	-.039	-.827	.409	-.667	.273	-.163	-.056	-.036	.866	1.155
	YSQ_impaired_limits_cluster	-.044	.059	-.050	-.740	.460	-.160	.073	.411	-.050	-.032	.414	2.416
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.062	.023	.218	2.645	.009	.016	.107	.410	.176	.115	.279	3.580
	AASanxiety_subscale AAS anxiety subscale total score	-.727	.494	-.102	-1.471	.143	-1.701	.247	.262	-.099	-.064	.393	2.546
	AASdepend_subscale AAS depend subscale total score	-.742	.571	-.096	-1.300	.195	-1.866	.383	-.294	-.087	-.057	.352	2.842
	AASclose_subscale AAS closeness subscale total score	1.054	.532	.131	1.980	.049	.005	2.103	-.170	.132	.086	.434	2.302
	GHQ_total General Health Questionnaire 12 total score	.076	.090	.044	.843	.400	-.102	.254	.307	.057	.037	.696	1.436

NOBAGS_total2	.220	.060	.209	3.645	.000	.101	.339	.487	.239	.159	.575	1.738
HIM_total Honor Ideology for Manhood scale total score	.080	.015	.306	5.239	.000	.050	.110	.531	.333	.228	.557	1.795
ATVS_total Attitudes towards violence scale total score	-.026	.026	-.055	-.986	.325	-.078	.026	.337	-.066	-.043	.613	1.630
HSNS_total HSNS total score	-.014	.031	-.035	-.463	.644	-.076	.047	.406	-.031	-.020	.342	2.922
NPI16_total NPI total score	.234	.121	.107	1.935	.054	-.004	.472	.371	.129	.084	.624	1.602
Psychopathysecondary_total PSYCHOP secondary subscale total	.488	.113	.315	4.337	.000	.266	.710	.522	.281	.189	.360	2.778
Psychopathyprimary_total PSYCHOP primary subscale total	-.089	.063	-.097	-1.418	.158	-.212	.035	.467	-.095	-.062	.409	2.446
UPPS_total Impulsivity UPPS total score	.109	.029	.183	3.714	.000	.051	.168	.377	.243	.162	.784	1.275
Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.051	.054	.046	.947	.345	-.055	.157	.242	.064	.041	.805	1.242
Sport Please give your best estimate: On average, how many hours per week would you watch televised spo...	.029	.105	.014	.279	.780	-.178	.237	.144	.019	.012	.717	1.395

4	Movies_TV Please give your best estimate: On average, how many hours per week would you watch movies and/or...	.048	.076	.031	.640	.523	-.101	.198	.112	.043	.028	.796	1.256
	(Constant)	-14.592	4.805		-3.037	.003	-24.062	-5.123					
	male	1.938	.752	.126	2.576	.011	.456	3.421	.307	.171	.112	.790	1.265
	SES_EDUC What is the highest level of education you have completed?	-.201	.238	-.039	-.844	.400	-.669	.268	-.163	-.057	-.037	.868	1.152
	YSQ_impaired_limits_cluster	-.045	.059	-.051	-.757	.450	-.161	.071	.411	-.051	-.033	.415	2.409
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.061	.023	.215	2.636	.009	.015	.106	.410	.175	.115	.284	3.527
	AASanxiety_subscale AAS anxiety subscale total score	-.728	.493	-.102	-1.475	.142	-1.700	.244	.262	-.099	-.064	.393	2.546
	AASdepend_subscale AAS depend subscale total score	-.733	.568	-.094	-1.289	.199	-1.853	.388	-.294	-.086	-.056	.353	2.833
	AASclose_subscale AAS closeness subscale total score	1.044	.530	.130	1.969	.050	-.001	2.088	-.170	.131	.086	.437	2.290
	GHQ_total General Health Questionnaire 12 total score	.077	.090	.045	.863	.389	-.099	.254	.307	.058	.038	.699	1.431
	NOBAGS_total2	.221	.060	.210	3.662	.000	.102	.339	.487	.239	.159	.576	1.736
	HIM_total Honor Ideology for Manhood scale total score	.080	.015	.307	5.271	.000	.050	.110	.531	.334	.229	.558	1.791

5	ATVS_total Attitudes towards violence scale total score	-.026	.026	-.055	-.988	.324	-.078	.026	.337	-.066	-.043	.613	1.630
	HSNS_total HSNS total score	-.015	.031	-.036	-.482	.630	-.076	.046	.406	-.032	-.021	.344	2.911
	NPI16_total NPI total score	.237	.120	.108	1.968	.050	.000	.474	.371	.131	.086	.628	1.592
	Psychopathysecondary_total PSYCHOP secondary subscale total	.493	.111	.318	4.442	.000	.274	.712	.522	.286	.193	.369	2.712
	Psychopathyprimary_total PSYCHOP primary subscale total	-.091	.062	-.099	-1.460	.146	-.213	.032	.467	-.098	-.064	.414	2.417
	UPPS_total Impulsivity UPPS total score	.110	.029	.184	3.772	.000	.053	.168	.377	.246	.164	.793	1.261
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.050	.054	.046	.939	.349	-.055	.156	.242	.063	.041	.806	1.240
	Movies_TV Please give your best estimate: On average, how many hours per week would you watch movies and/or...	.056	.071	.036	.795	.428	-.083	.195	.112	.053	.035	.914	1.094
	(Constant)	-14.809	4.776		-3.101	.002	-24.220	-5.397					
	male	2.000	.740	.130	2.703	.007	.542	3.459	.307	.179	.117	.814	1.228
	SES_EDUC What is the highest level of education you have completed?	-.189	.236	-.037	-.800	.424	-.654	.276	-.163	-.054	-.035	.877	1.140

YSQ_impaired_limits_cluster	-.051	.057	-.059	-.901	.369	-.164	.061	.411	-.060	-.039	.440	2.270
YSQ impaired limits cluster												
YSQ_cluster_disconn_reject												
YSQ disconnection and rejection cluster	.058	.022	.205	2.605	.010	.014	.102	.410	.172	.113	.304	3.288
AASanxiety_subscale AAS anxiety subscale total score	-.751	.490	-.106	-1.532	.127	-1.716	.215	.262	-.102	-.067	.397	2.521
AASdepend_subscale AAS depend subscale total score	-.688	.560	-.089	-1.229	.220	-1.792	.415	-.294	-.082	-.053	.362	2.759
AASclose_subscale AAS closeness subscale total score	1.051	.529	.131	1.987	.048	.008	2.093	-.170	.132	.086	.437	2.288
GHQ_total General Health Questionnaire 12 total score	.076	.090	.044	.848	.397	-.101	.253	.307	.057	.037	.699	1.430
NOBAGS_total2	.219	.060	.209	3.650	.000	.101	.338	.487	.238	.159	.577	1.733
HIM_total Honor Ideology for Manhood scale total score	.079	.015	.304	5.258	.000	.050	.109	.531	.333	.228	.564	1.774
ATVS_total Attitudes towards violence scale total score	-.026	.026	-.055	-.999	.319	-.078	.025	.337	-.067	-.043	.614	1.630
NPI16_total NPI total score	.245	.119	.112	2.057	.041	.010	.479	.371	.137	.089	.640	1.562
Psychopathysecondary_total PSYCHOP secondary subscale total	.488	.110	.315	4.425	.000	.271	.706	.522	.285	.192	.372	2.691
Psychopathyprimary_total PSYCHOP primary subscale total	-.093	.062	-.101	-1.507	.133	-.215	.029	.467	-.101	-.065	.416	2.401

	UPPS_total Impulsivity	.108	.029	.180	3.750	.000	.051	.165	.377	.244	.163	.815	1.227
	UPPS total score												
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.049	.053	.044	.920	.358	-.056	.154	.242	.062	.040	.808	1.238
	Movies_TV Please give your best estimate: On average, how many hours per week would you watch movies and/or...	.055	.070	.036	.783	.434	-.084	.194	.112	.052	.034	.914	1.094
	(Constant)	-14.517	4.757		-3.052	.003	-23.891	-5.142					
	male	2.023	.739	.132	2.738	.007	.567	3.479	.307	.180	.119	.815	1.226
	SES_EDUC What is the highest level of education you have completed?	-.200	.235	-.039	-.850	.396	-.664	.264	-.163	-.057	-.037	.881	1.136
	YSQ_impaired_limits_cluster	-.054	.057	-.062	-.957	.340	-.166	.058	.411	-.064	-.042	.442	2.260
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
6	YSQ disconnection and rejection cluster	.057	.022	.201	2.560	.011	.013	.100	.410	.169	.111	.305	3.274
	AASanxiety_subscale AAS anxiety subscale total score	-.746	.490	-.105	-1.523	.129	-1.710	.219	.262	-.101	-.066	.397	2.521
	AASdepend_subscale AAS depend subscale total score	-.674	.559	-.087	-1.206	.229	-1.776	.428	-.294	-.080	-.052	.363	2.756
	AASclose_subscale AAS closeness subscale total score	1.037	.528	.129	1.964	.051	-.003	2.078	-.170	.130	.085	.437	2.286

7	GHQ_total General Health Questionnaire 12 total score	.082	.089	.048	.922	.357	-.093	.258	.307	.062	.040	.705	1.418
	NOBAGS_total2	.216	.060	.205	3.603	.000	.098	.334	.487	.235	.156	.581	1.722
	HIM_total Honor Ideology for Manhood scale total score	.080	.015	.308	5.350	.000	.051	.110	.531	.337	.232	.568	1.761
	ATVS_total Attitudes towards violence scale total score	-.025	.026	-.053	-.959	.339	-.076	.026	.337	-.064	-.042	.615	1.625
	NPI16_total NPI total score	.250	.119	.114	2.108	.036	.016	.484	.371	.140	.091	.642	1.557
	Psychopathysecondary_total PSYCHOP secondary subscale total	.491	.110	.317	4.454	.000	.274	.708	.522	.286	.193	.372	2.688
	Psychopathyprimary_total PSYCHOP primary subscale total	-.091	.062	-.100	-1.481	.140	-.213	.030	.467	-.099	-.064	.417	2.398
	UPPS_total Impulsivity UPPS total score	.106	.029	.178	3.704	.000	.050	.163	.377	.241	.161	.820	1.220
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.055	.053	.050	1.045	.297	-.049	.159	.242	.070	.045	.825	1.212
	(Constant)	-16.233	4.305		-3.771	.000	-24.715	-7.750					
	male	2.004	.738	.130	2.716	.007	.550	3.459	.307	.179	.118	.816	1.225
	YSQ_impaired_limits_cluster	-.052	.057	-.060	-.919	.359	-.164	.060	.411	-.061	-.040	.443	2.255
	YSQ impaired limits cluster												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.058	.022	.206	2.635	.009	.015	.102	.410	.173	.114	.307	3.254

AASanxiety_subscale AAS anxiety subscale total score	-.774	.488	-.109	-1.586	.114	-1.736	.188	.262	-.105	-.069	.399	2.509
AASdepend_subscale AAS depend subscale total score	-.679	.559	-.088	-1.216	.225	-1.781	.422	-.294	-.081	-.053	.363	2.756
AASclose_subscale AAS closeness subscale total score	1.115	.520	.139	2.146	.033	.091	2.139	-.170	.142	.093	.451	2.217
GHQ_total General Health Questionnaire 12 total score	.084	.089	.049	.939	.349	-.092	.259	.307	.063	.041	.705	1.418
NOBAGS_total2	.215	.060	.205	3.601	.000	.098	.333	.487	.234	.156	.581	1.722
HIM_total Honor Ideology for Manhood scale total score	.082	.015	.315	5.517	.000	.053	.112	.531	.346	.239	.578	1.729
ATVS_total Attitudes towards violence scale total score	-.023	.026	-.048	-.879	.380	-.074	.028	.337	-.059	-.038	.622	1.609
NPI16_total NPI total score	.239	.118	.109	2.029	.044	.007	.471	.371	.134	.088	.650	1.538
Psychopathysecondary_total PSYCHOP secondary subscale total	.497	.110	.321	4.520	.000	.280	.714	.522	.289	.196	.373	2.678
Psychopathyprimary_total PSYCHOP primary subscale total	-.096	.061	-.104	-1.557	.121	-.217	.025	.467	-.103	-.068	.420	2.382
UPPS_total Impulsivity UPPS total score	.108	.029	.180	3.777	.000	.052	.164	.377	.245	.164	.824	1.214
Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.058	.053	.052	1.096	.274	-.046	.162	.242	.073	.048	.828	1.208

8	(Constant)	-16.215	4.302		-3.769	.000	-24.693	-7.737					
	male	2.108	.728	.137	2.896	.004	.674	3.543	.307	.190	.126	.838	1.194
	YSQ_impaired_limits_cluster												
	YSQ impaired limits cluster	-.044	.056	-.050	-.785	.433	-.154	.066	.411	-.052	-.034	.456	2.194
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.058	.022	.204	2.612	.010	.014	.101	.410	.172	.113	.308	3.252
	AASanxiety_subscale AAS anxiety subscale total score	-.789	.488	-.111	-1.619	.107	-1.750	.171	.262	-.107	-.070	.399	2.506
	AASdepend_subscale AAS depend subscale total score	-.738	.555	-.095	-1.330	.185	-1.831	.355	-.294	-.088	-.058	.368	2.717
	AASclose_subscale AAS closeness subscale total score	1.134	.519	.141	2.185	.030	.111	2.157	-.170	.144	.095	.452	2.213
	GHQ_total General Health Questionnaire 12 total score	.078	.089	.045	.882	.379	-.097	.253	.307	.059	.038	.709	1.411
	NOBAGS_total2	.207	.059	.197	3.510	.001	.091	.324	.487	.228	.152	.595	1.682
	HIM_total Honor Ideology for Manhood scale total score	.076	.013	.292	5.738	.000	.050	.102	.531	.357	.249	.725	1.379
	NPI16_total NPI total score	.236	.118	.108	2.007	.046	.004	.468	.371	.133	.087	.650	1.537
	Psychopathysecondary_total PSYCHOP secondary subscale total	.490	.110	.316	4.470	.000	.274	.706	.522	.286	.194	.375	2.663
	Psychopathyprimary_total PSYCHOP primary subscale total	-.102	.061	-.112	-1.680	.094	-.222	.018	.467	-.111	-.073	.426	2.345
	UPPS_total Impulsivity UPPS total score	.108	.029	.180	3.768	.000	.051	.164	.377	.244	.163	.824	1.214

9	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.053	.052	.048	1.009	.314	-.050	.156	.242	.067	.044	.837	1.194
	(Constant)	-16.020	4.292		-3.733	.000	-24.476	-7.563					
	male	2.148	.726	.140	2.959	.003	.718	3.578	.307	.193	.128	.842	1.188
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.056	.022	.197	2.538	.012	.012	.099	.410	.166	.110	.312	3.205
	AASanxiety_subscale AAS anxiety subscale total score	-.858	.479	-.121	-1.791	.075	-1.802	.086	.262	-.118	-.078	.412	2.425
	AASdepend_subscale AAS depend subscale total score	-.757	.554	-.097	-1.367	.173	-1.847	.334	-.294	-.091	-.059	.369	2.712
	AASclose_subscale AAS closeness subscale total score	1.119	.518	.139	2.159	.032	.098	2.140	-.170	.142	.093	.452	2.210
	GHQ_total General Health Questionnaire 12 total score	.068	.088	.040	.779	.437	-.105	.242	.307	.052	.034	.723	1.383
	NOBAGS_total2	.204	.059	.194	3.459	.001	.088	.319	.487	.224	.150	.599	1.670
	HIM_total Honor Ideology for Manhood scale total score	.076	.013	.291	5.724	.000	.050	.102	.531	.356	.248	.726	1.378
	NPI16_total NPI total score	.217	.115	.099	1.887	.060	-.010	.444	.371	.125	.082	.679	1.472
	Psychopathysecondary_total PSYCHOP secondary subscale total	.468	.106	.302	4.421	.000	.259	.676	.522	.282	.191	.402	2.486
	Psychopathyprimary_total PSYCHOP primary subscale total	-.106	.061	-.116	-1.752	.081	-.226	.013	.467	-.116	-.076	.429	2.329

10	UPPS_total Impulsivity	.108	.029	.181	3.784	.000	.052	.164	.377	.244	.164	.824	1.213
	UPPS total score												
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.046	.052	.041	.888	.376	-.056	.147	.242	.059	.038	.863	1.159
	(Constant)	-15.068	4.110		-3.666	.000	-23.167	-6.968					
	male	2.154	.725	.140	2.970	.003	.725	3.583	.307	.193	.129	.842	1.188
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.059	.021	.208	2.740	.007	.017	.101	.410	.179	.119	.324	3.088
	AASanxiety_subscale AAS anxiety subscale total score	-.824	.477	-.116	-1.728	.085	-1.763	.116	.262	-.114	-.075	.416	2.404
	AASdepend_subscale AAS depend subscale total score	-.760	.553	-.098	-1.374	.171	-1.850	.330	-.294	-.091	-.059	.369	2.712
	AASclose_subscale AAS closeness subscale total score	1.147	.517	.142	2.220	.027	.129	2.165	-.170	.146	.096	.455	2.199
	NOBAGS_total2	.206	.059	.196	3.506	.001	.090	.322	.487	.227	.152	.600	1.666
	HIM_total Honor Ideology for Manhood scale total score	.075	.013	.288	5.690	.000	.049	.101	.531	.353	.246	.729	1.372
	NPI16_total NPI total score	.233	.113	.107	2.062	.040	.010	.456	.371	.136	.089	.702	1.424
	Psychopathysecondary_total PSYCHOP secondary subscale total	.481	.104	.311	4.618	.000	.276	.687	.522	.293	.200	.414	2.417
	Psychopathyprimary_total PSYCHOP primary subscale total	-.111	.060	-.121	-1.837	.067	-.230	.008	.467	-.121	-.080	.433	2.307

11	UPPS_total Impulsivity	.109	.028	.182	3.829	.000	.053	.165	.377	.246	.166	.826	1.211
	UPPS total score												
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.046	.051	.041	.890	.375	-.056	.147	.242	.059	.039	.863	1.159
	(Constant)	-15.619	4.062		-3.845	.000	-23.622	-7.615					
	male	2.235	.719	.145	3.108	.002	.818	3.652	.307	.202	.134	.855	1.169
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.059	.021	.209	2.754	.006	.017	.101	.410	.179	.119	.324	3.087
	AASanxiety_subscale AAS anxiety subscale total score	-.858	.475	-.121	-1.806	.072	-1.794	.078	.262	-.119	-.078	.419	2.389
	AASdepend_subscale AAS depend subscale total score	-.796	.551	-.103	-1.444	.150	-1.883	.290	-.294	-.095	-.062	.371	2.697
	AASclose_subscale AAS closeness subscale total score	1.169	.516	.145	2.267	.024	.153	2.185	-.170	.148	.098	.456	2.194
	NOBAGS_total2	.201	.058	.191	3.440	.001	.086	.316	.487	.222	.149	.606	1.651
	HIM_total Honor Ideology for Manhood scale total score	.075	.013	.287	5.666	.000	.049	.101	.531	.351	.245	.730	1.370
	NPI16_total NPI total score	.237	.113	.108	2.098	.037	.014	.460	.371	.138	.091	.703	1.423
	Psychopathysecondary_total PSYCHOP secondary subscale total	.492	.104	.317	4.749	.000	.288	.696	.522	.300	.205	.419	2.387
	Psychopathyprimary_total PSYCHOP primary subscale total	-.105	.060	-.114	-1.749	.082	-.223	.013	.467	-.115	-.076	.439	2.278

12	UPPS_total Impulsivity	.114	.028	.190	4.047	.000	.058	.169	.377	.259	.175	.852	1.174
	UPPS total score												
	(Constant)	-17.954	3.735		-4.807	.000	-25.313	-10.594					
	male	2.111	.716	.137	2.950	.004	.701	3.521	.307	.191	.128	.868	1.153
	YSQ_cluster_disconn_reject												
	YSQ disconnection and	.067	.021	.237	3.213	.002	.026	.108	.410	.208	.139	.346	2.892
	rejection cluster												
	AASanxiety_subscale AAS												
	anxiety subscale total score	-.763	.472	-.107	-1.617	.107	-1.692	.167	.262	-.106	-.070	.427	2.343
	AASclose_subscale AAS												
	closeness subscale total	.781	.441	.097	1.771	.078	-.088	1.651	-.170	.116	.077	.625	1.599
	score												
13	NOBAGS_total2	.191	.058	.182	3.283	.001	.076	.305	.487	.212	.142	.614	1.628
	HIM_total Honor Ideology for												
	Manhood scale total score	.076	.013	.290	5.726	.000	.050	.102	.531	.354	.248	.731	1.367
	NPI16_total NPI total score	.249	.113	.114	2.206	.028	.027	.472	.371	.144	.096	.707	1.415
	Psychopathysecondary_total												
	PSYCHOP secondary	.508	.103	.328	4.931	.000	.305	.712	.522	.310	.214	.424	2.357
	subscale total												
	Psychopathyprimary_total												
	PSYCHOP primary subscale	-.107	.060	-.117	-1.785	.076	-.226	.011	.467	-.117	-.077	.439	2.276
	total												
	UPPS_total Impulsivity												
	UPPS total score	.117	.028	.195	4.165	.000	.061	.172	.377	.265	.181	.857	1.167
	(Constant)	-19.241	3.662		-5.254	.000	-26.456	-12.025					
	male	2.127	.718	.138	2.963	.003	.713	3.542	.307	.192	.129	.868	1.152

14	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.049	.018	.173	2.770	.006	.014	.083	.410	.180	.121	.488	2.051
	AASclose_subscale AAS												
	closeness subscale total score	.909	.436	.113	2.086	.038	.051	1.767	-.170	.136	.091	.646	1.548
	NOBAGS_total2	.181	.058	.172	3.113	.002	.066	.295	.487	.201	.135	.622	1.608
	HIM_total Honor Ideology for Manhood scale total score	.075	.013	.286	5.625	.000	.048	.101	.531	.348	.245	.734	1.363
	NPI16_total NPI total score	.256	.113	.117	2.257	.025	.033	.479	.371	.147	.098	.708	1.413
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.489	.103	.316	4.760	.000	.287	.692	.522	.299	.207	.430	2.326
	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.095	.060	-.103	-1.586	.114	-.213	.023	.467	-.104	-.069	.447	2.239
	UPPS_total Impulsivity												
	UPPS total score	.120	.028	.200	4.273	.000	.065	.175	.377	.271	.186	.861	1.161
	(Constant)	-19.539	3.669		-5.325	.000	-26.768	-12.309					
	male	1.977	.714	.129	2.768	.006	.570	3.384	.307	.179	.121	.883	1.132
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.046	.018	.162	2.604	.010	.011	.080	.410	.169	.114	.494	2.026
	AASclose_subscale AAS												
	closeness subscale total score	.880	.437	.109	2.016	.045	.020	1.741	-.170	.131	.088	.647	1.545
	NOBAGS_total2	.158	.056	.150	2.801	.006	.047	.269	.487	.181	.122	.662	1.511

15	HIM_total Honor Ideology for Manhood scale total score	.072	.013	.276	5.458	.000	.046	.098	.531	.338	.238	.744	1.344
	NPI16_total NPI total score	.198	.108	.091	1.842	.067	-.014	.411	.371	.120	.080	.788	1.269
	Psychopathysecondary_total PSYCHOP secondary subscale total	.430	.096	.278	4.476	.000	.241	.620	.522	.283	.195	.495	2.020
	UPPS_total Impulsivity UPPS total score	.118	.028	.198	4.205	.000	.063	.174	.377	.267	.184	.862	1.160
	(Constant)	-21.094	3.589		-5.877	.000	-28.165	-14.023					
	male	2.006	.718	.131	2.796	.006	.593	3.420	.307	.181	.123	.884	1.132
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.046	.018	.162	2.599	.010	.011	.081	.410	.168	.114	.494	2.026
	AASclose_subscale AAS closeness subscale total score	.968	.436	.120	2.219	.027	.109	1.828	-.170	.144	.097	.655	1.527
	NOBAGS_total2	.183	.055	.174	3.332	.001	.075	.292	.487	.214	.146	.703	1.422
	HIM_total Honor Ideology for Manhood scale total score	.076	.013	.292	5.839	.000	.051	.102	.531	.358	.256	.767	1.303
16	Psychopathysecondary_total PSYCHOP secondary subscale total	.434	.097	.280	4.499	.000	.244	.625	.522	.283	.197	.495	2.019
	UPPS_total Impulsivity UPPS total score	.128	.028	.215	4.630	.000	.074	.183	.377	.291	.203	.897	1.115
	(Constant)	-17.005	3.106		-5.475	.000	-23.123	-10.886					
	male	2.030	.723	.132	2.805	.005	.604	3.455	.307	.181	.124	.884	1.131

17	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.029	.016	.103	1.811	.071	-.003	.061	.410	.118	.080	.604	1.657
	NOBAGS_total2	.186	.055	.177	3.347	.001	.076	.295	.487	.214	.148	.704	1.421
	HIM_total Honor Ideology for Manhood scale total score	.075	.013	.287	5.685	.000	.049	.101	.531	.349	.252	.769	1.300
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.408	.097	.264	4.225	.000	.218	.599	.522	.267	.187	.503	1.989
	UPPS_total Impulsivity												
	UPPS total score	.136	.028	.227	4.886	.000	.081	.190	.377	.305	.216	.909	1.100
	(Constant)	-17.464	3.110		-5.615	.000	-23.592	-11.336					
	male	2.140	.724	.139	2.953	.003	.712	3.567	.307	.190	.131	.890	1.123
	NOBAGS_total2	.188	.056	.179	3.382	.001	.079	.298	.487	.216	.150	.704	1.420
	HIM_total Honor Ideology for Manhood scale total score	.073	.013	.281	5.559	.000	.047	.099	.531	.342	.247	.772	1.295
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.506	.081	.327	6.290	.000	.348	.665	.522	.380	.280	.732	1.366
	UPPS_total Impulsivity												
	UPPS total score	.139	.028	.233	5.002	.000	.084	.194	.377	.311	.222	.914	1.094
	(Constant)	-17.172	3.159		-5.435	.000	-23.396	-10.947					
18	NOBAGS_total2	.208	.056	.198	3.707	.000	.098	.319	.487	.235	.168	.715	1.399
	HIM_total Honor Ideology for Manhood scale total score	.084	.013	.322	6.500	.000	.059	.109	.531	.390	.294	.833	1.200

Psychopathysecondary_total													
PSYCHOP secondary	.494	.082	.319	6.046	.000	.333	.655	.522	.367	.273	.734	1.363	
subscale total													
UPPS_total Impulsivity													
UPPS total score	.137	.028	.230	4.861	.000	.082	.193	.377	.302	.220	.914	1.094	

a. Dependent Variable: physical_aggression_subscale AQ physical aggression subscale total

Hostility**Coefficients^a**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	-7.710	3.686		-2.092	.038	-14.973	-.446					
SES_EDUC What is the highest level of education you have completed?	-.412	.180	-.086	-2.292	.023	-.766	-.058	-.152	-.152	-.077	.795	1.258
SES_INCOME What is your total household income (before tax is taken out)?	-.054	.164	-.012	-.332	.740	-.377	.268	-.226	-.022	-.011	.801	1.248
YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.044	.043	-.054	-1.028	.305	-.128	.040	.559	-.069	-.035	.415	2.412
1 YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.106	.017	.401	6.191	.000	.072	.140	.769	.384	.208	.269	3.722
AASanxiety_subscale AAS anxiety subscale total score	.025	.361	.004	.070	.945	-.686	.736	.579	.005	.002	.384	2.603
AASdepend_subscale AAS depend subscale total score	-.649	.416	-.089	-1.562	.120	-1.468	.170	-.589	-.104	-.052	.345	2.895
AASclose_subscale AAS closeness subscale total score	.587	.386	.078	1.520	.130	-.174	1.349	-.423	.102	.051	.430	2.327

	GHQ_total General Health Questionnaire 12 total score	.066	.067	.041	.998	.319	-.065	.198	.418	.067	.034	.665	1.504
	NOBAGS_total2	.123	.044	.125	2.810	.005	.037	.209	.451	.186	.094	.573	1.745
	HIM_total Honor Ideology for Manhood scale total score	.017	.010	.070	1.635	.103	-.004	.038	.272	.109	.055	.619	1.614
	ATVS_total Attitudes towards violence scale total score	-.048	.019	-.108	-2.538	.012	-.085	-.011	.193	-.168	-.085	.624	1.603
	HSNS_total HSNS total score	.085	.023	.217	3.745	.000	.040	.130	.740	.244	.126	.336	2.976
	NPI16_total NPI total score	.082	.088	.040	.935	.351	-.091	.255	.192	.063	.031	.617	1.620
	Mach_total MACH total score	.106	.034	.162	3.090	.002	.038	.173	.568	.203	.104	.412	2.424
	Psychopathysecondary_total PSYCHOP secondary subscale total	.254	.080	.175	3.171	.002	.096	.413	.663	.209	.106	.369	2.708
	Psychopathyprimary_total PSYCHOP primary subscale total	-.092	.049	-.107	-1.869	.063	-.190	.005	.479	-.125	-.063	.343	2.919
	UPPS_total Impulsivity UPPS total score	.060	.021	.108	2.852	.005	.019	.102	.256	.188	.096	.789	1.267
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.051	.039	.049	1.321	.188	-.025	.127	.210	.089	.044	.815	1.226
2	(Constant)	-7.663	3.616		-2.119	.035	-14.788	-.538					

SES_EDUC What is the highest level of education you have completed?	-.411	.179	-.086	-2.299	.022	-.763	-.059	-.152	-.153	-.077	.800	1.250
SES_INCOME What is your total household income (before tax is taken out)?	-.054	.163	-.012	-.331	.741	-.376	.268	-.226	-.022	-.011	.802	1.247
YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.043	.042	-.053	-1.031	.304	-.126	.039	.559	-.069	-.035	.425	2.356
YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.107	.016	.403	6.819	.000	.076	.137	.769	.416	.229	.322	3.110
AASdepend_subscale AAS depend subscale total score	-.654	.410	-.090	-1.595	.112	-1.461	.154	-.589	-.106	-.053	.354	2.826
AASclose_subscale AAS closeness subscale total score	.586	.385	.078	1.522	.129	-.173	1.345	-.423	.102	.051	.431	2.322
GHQ_total General Health Questionnaire 12 total score	.067	.066	.041	1.002	.317	-.064	.197	.418	.067	.034	.665	1.504
NOBAGS_total2	.123	.043	.125	2.840	.005	.038	.209	.451	.187	.095	.580	1.725
HIM_total Honor Ideology for Manhood scale total score	.017	.010	.070	1.642	.102	-.003	.038	.272	.110	.055	.620	1.612
ATVS_total Attitudes towards violence scale total score	-.048	.019	-.108	-2.543	.012	-.085	-.011	.193	-.168	-.085	.625	1.601
HSNS_total HSNS total score	.085	.022	.217	3.788	.000	.041	.129	.740	.246	.127	.341	2.934
NPI16_total NPI total score	.081	.087	.040	.935	.351	-.090	.253	.192	.063	.031	.623	1.604

3	Mach_total MACH total score	.105	.034	.161	3.123	.002	.039	.172	.568	.205	.105	.422	2.368
	Psychopathysecondary_total PSYCHOP secondary subscale total	.255	.080	.175	3.183	.002	.097	.412	.663	.209	.107	.370	2.705
	Psychopathyprimary_total PSYCHOP primary subscale total	-.092	.049	-.107	-1.879	.062	-.189	.005	.479	-.125	-.063	.343	2.913
	UPPS_total Impulsivity UPPS total score	.060	.021	.108	2.864	.005	.019	.102	.256	.189	.096	.796	1.257
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.051	.038	.049	1.326	.186	-.025	.126	.210	.089	.044	.829	1.206
	(Constant)	-7.746	3.600		-2.152	.032	-14.839	-.652					
	SES_EDUC What is the highest level of education you have completed?	-.428	.171	-.090	-2.503	.013	-.765	-.091	-.152	-.165	-.084	.871	1.148
	YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.045	.042	-.055	-1.069	.286	-.127	.038	.559	-.071	-.036	.428	2.335
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.108	.015	.407	7.043	.000	.077	.138	.769	.427	.236	.335	2.984
	AASdepend_subscale AAS depend subscale total score	-.661	.408	-.091	-1.620	.107	-1.466	.143	-.589	-.108	-.054	.355	2.817
	AASclose_subscale AAS closeness subscale total score	.588	.384	.078	1.529	.128	-.170	1.345	-.423	.102	.051	.431	2.321

	GHQ_total General Health Questionnaire 12 total score	.066	.066	.041	.998	.319	-.064	.197	.418	.067	.033	.665	1.503
	NOBAGS_total2	.124	.043	.126	2.881	.004	.039	.209	.451	.189	.096	.583	1.714
	HIM_total Honor Ideology for Manhood scale total score	.017	.010	.069	1.631	.104	-.004	.037	.272	.109	.055	.622	1.608
	ATVS_total Attitudes towards violence scale total score	-.048	.019	-.109	-2.588	.010	-.085	-.012	.193	-.171	-.087	.630	1.588
	HSNS_total HSNS total score	.085	.022	.216	3.782	.000	.041	.129	.740	.246	.126	.343	2.919
	NPI16_total NPI total score	.078	.086	.038	.901	.368	-.092	.248	.192	.060	.030	.634	1.577
	Mach_total MACH total score	.105	.034	.161	3.131	.002	.039	.172	.568	.205	.105	.422	2.368
	Psychopathysecondary_total PSYCHOP secondary subscale total	.256	.080	.176	3.205	.002	.098	.413	.663	.210	.107	.370	2.701
	Psychopathyprimary_total PSYCHOP primary subscale total	-.092	.049	-.107	-1.879	.062	-.189	.005	.479	-.125	-.063	.343	2.913
	UPPS_total Impulsivity UPPS total score	.061	.021	.108	2.879	.004	.019	.102	.256	.189	.096	.796	1.256
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.051	.038	.049	1.346	.180	-.024	.126	.210	.090	.045	.831	1.203
4	(Constant)	-8.359	3.533		-2.366	.019	-15.322	-1.397					

SES_EDUC What is the highest level of education you have completed?	-.414	.170	-.087	-2.433	.016	-.749	-.079	-.152	-.160	-.081	.878	1.139
YSQ_impaired_limits_cluster YSQ impaired limits cluster	-.036	.041	-.044	-.889	.375	-.116	.044	.559	-.059	-.030	.452	2.215
YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.107	.015	.403	7.000	.000	.077	.137	.769	.424	.234	.337	2.969
AASdepend_subscale AAS depend subscale total score	-.698	.406	-.096	-1.719	.087	-1.498	.102	-.589	-.114	-.057	.359	2.789
AASclose_subscale AAS closeness subscale total score	.626	.382	.083	1.640	.102	-.126	1.378	-.423	.109	.055	.436	2.293
GHQ_total General Health Questionnaire 12 total score	.074	.066	.046	1.120	.264	-.056	.203	.418	.075	.037	.676	1.480
NOBAGS_total2	.129	.043	.131	3.012	.003	.045	.213	.451	.197	.101	.592	1.690
HIM_total Honor Ideology for Manhood scale total score	.018	.010	.074	1.752	.081	-.002	.038	.272	.116	.059	.631	1.585
ATVS_total Attitudes towards violence scale total score	-.047	.019	-.107	-2.553	.011	-.084	-.011	.193	-.168	-.085	.631	1.585
HSNS_total HSNS total score	.082	.022	.209	3.698	.000	.038	.126	.740	.240	.124	.348	2.871
Mach_total MACH total score	.104	.034	.159	3.091	.002	.038	.170	.568	.202	.103	.423	2.362
Psychopathysecondary_total PSYCHOP secondary subscale total	.245	.079	.169	3.105	.002	.089	.400	.663	.203	.104	.379	2.639

5	Psychopathyprimary_total												
	PSYCHOP primary subscale total	-.080	.047	-.092	-1.692	.092	-.172	.013	.479	-.112	-.057	.374	2.673
	UPPS_total Impulsivity												
	UPPS total score	.064	.021	.114	3.079	.002	.023	.105	.256	.202	.103	.820	1.219
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...												
	(Constant)	.051	.038	.050	1.352	.178	-.024	.126	.210	.090	.045	.831	1.203
	SES_EDUC What is the highest level of education you have completed?	-8.121	3.521		-2.306	.022	-15.061	-1.182					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	-.416	.170	-.087	-2.446	.015	-.751	-.081	-.152	-.161	-.082	.878	1.139
	AASdepend_subscale AAS depend subscale total score	.105	.015	.398	6.949	.000	.075	.135	.769	.420	.232	.340	2.938
	AASclose_subscale AAS closeness subscale total score	-.717	.405	-.099	-1.768	.078	-1.516	.082	-.589	-.117	-.059	.360	2.781
	GHQ_total General Health Questionnaire 12 total score	.610	.381	.081	1.600	.111	-.141	1.361	-.423	.106	.053	.437	2.288
	NOBAGS_total2	.063	.065	.039	.981	.328	-.064	.191	.418	.065	.033	.697	1.434
	HIM_total Honor Ideology for Manhood scale total score	.124	.042	.126	2.920	.004	.040	.207	.451	.191	.098	.603	1.659
		.017	.010	.070	1.680	.094	-.003	.037	.272	.111	.056	.636	1.573

6	ATVS_total Attitudes towards violence scale total score	-.045	.018	-.102	-2.446	.015	-.081	-.009	.193	-.161	-.082	.646	1.547
	HSNS_total HSNS total score	.077	.022	.197	3.592	.000	.035	.120	.740	.233	.120	.370	2.699
	Mach_total MACH total score	.104	.034	.160	3.109	.002	.038	.171	.568	.203	.104	.424	2.361
	Psychopathysecondary_total PSYCHOP secondary subscale total	.230	.077	.158	2.985	.003	.078	.381	.663	.195	.100	.398	2.514
	Psychopathyprimary_total PSYCHOP primary subscale total	-.085	.047	-.099	-1.820	.070	-.177	.007	.479	-.120	-.061	.380	2.630
	UPPS_total Impulsivity UPPS total score	.064	.021	.115	3.109	.002	.024	.105	.256	.203	.104	.821	1.218
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.046	.038	.045	1.233	.219	-.028	.120	.210	.082	.041	.850	1.176
	(Constant)	-7.054	3.349		-2.107	.036	-13.653	-.456					
	SES_EDUC What is the highest level of education you have completed?	-.412	.170	-.086	-2.424	.016	-.747	-.077	-.152	-.159	-.081	.879	1.138
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.109	.015	.412	7.407	.000	.080	.138	.769	.442	.247	.361	2.766
	AASdepend_subscale AAS depend subscale total score	-.741	.405	-.102	-1.833	.068	-1.539	.056	-.589	-.121	-.061	.361	2.771

	AASclose_subscale AAS closeness subscale total score	.654	.379	.087	1.727	.086	-.092	1.400	-.423	.114	.058	.443	2.256
	NOBAGS_total2	.128	.042	.130	3.037	.003	.045	.211	.451	.198	.101	.609	1.641
	HIM_total Honor Ideology for Manhood scale total score	.017	.010	.068	1.622	.106	-.004	.037	.272	.107	.054	.638	1.567
	ATVS_total Attitudes towards violence scale total score	-.044	.018	-.100	-2.403	.017	-.080	-.008	.193	-.158	-.080	.648	1.544
	HSNS_total HSNS total score	.080	.021	.203	3.732	.000	.038	.122	.740	.241	.125	.376	2.662
	Mach_total MACH total score	.096	.032	.146	2.955	.003	.032	.160	.568	.193	.099	.454	2.201
	Psychopathysecondary_total PSYCHOP secondary subscale total	.241	.076	.166	3.161	.002	.091	.390	.663	.206	.106	.406	2.461
	Psychopathyprimary_total PSYCHOP primary subscale total	-.082	.047	-.095	-1.758	.080	-.173	.010	.479	-.116	-.059	.382	2.617
	UPPS_total Impulsivity UPPS total score	.065	.021	.116	3.139	.002	.024	.106	.256	.204	.105	.822	1.217
	Music Please give your best estimate: On average, how many hours per week would you listen to music whi...	.045	.037	.043	1.188	.236	-.029	.118	.210	.079	.040	.852	1.174
7	(Constant)	-7.425	3.337		-2.225	.027	-14.001	-.849					

SES_EDUC What is the highest level of education you have completed?	-.421	.170	-.088	-2.476	.014	-.756	-.086	-.152	-.162	-.083	.880	1.136
YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.108	.015	.410	7.374	.000	.079	.137	.769	.440	.247	.362	2.765
AASdepend_subscale AAS depend subscale total score	-.774	.404	-.106	-1.917	.056	-1.570	.022	-.589	-.126	-.064	.363	2.758
AASclose_subscale AAS closeness subscale total score	.682	.378	.090	1.802	.073	-.064	1.427	-.423	.119	.060	.445	2.248
NOBAGS_total2	.124	.042	.126	2.944	.004	.041	.207	.451	.192	.098	.614	1.629
HIM_total Honor Ideology for Manhood scale total score	.016	.010	.066	1.576	.117	-.004	.036	.272	.104	.053	.639	1.564
ATVS_total Attitudes towards violence scale total score	-.043	.018	-.097	-2.340	.020	-.079	-.007	.193	-.154	-.078	.650	1.539
HSNS_total HSNS total score	.082	.021	.209	3.836	.000	.040	.124	.740	.247	.128	.378	2.645
Mach_total MACH total score	.090	.032	.137	2.798	.006	.026	.153	.568	.183	.094	.467	2.144
Psychopathysecondary_total PSYCHOP secondary subscale total	.246	.076	.170	3.243	.001	.097	.396	.663	.210	.108	.408	2.450
Psychopathyprimary_total PSYCHOP primary subscale total	-.070	.046	-.082	-1.541	.125	-.160	.020	.479	-.102	-.052	.400	2.502

8	UPPS_total Impulsivity	.069	.020	.122	3.347	.001	.028	.109	.256	.217	.112	.840	1.191
	UPPS total score												
	(Constant)	-6.376	3.277		-1.946	.053	-12.833	.081					
	SES_EDUC What is the												
	highest level of education												
	you have completed?												
	YSQ_cluster_disconn_reject												
	YSQ disconnection and	.107	.015	.406	7.290	.000	.078	.136	.769	.435	.244	.362	2.759
	rejection cluster												
	AASdepend_subscale AAS												
	depend subscale total score	-.833	.403	-.115	-2.065	.040	-1.628	-.038	-.589	-.136	-.069	.366	2.733
	AASclose_subscale AAS												
	closeness subscale total												
	score	.677	.379	.090	1.786	.075	-.070	1.425	-.423	.117	.060	.445	2.247
	NOBAGS_total2	.109	.041	.111	2.661	.008	.028	.191	.451	.174	.089	.645	1.550
	HIM_total Honor Ideology for												
	Manhood scale total score	.014	.010	.057	1.364	.174	-.006	.034	.272	.090	.046	.653	1.532
	ATVS_total Attitudes												
	towards violence scale total												
	score	-.046	.018	-.103	-2.496	.013	-.082	-.010	.193	-.163	-.084	.656	1.525
	HSNS_total HSNS total												
	score	.083	.021	.212	3.884	.000	.041	.125	.740	.249	.130	.379	2.642
	Mach_total MACH total												
	score	.068	.029	.104	2.356	.019	.011	.125	.568	.154	.079	.575	1.738
	Psychopathysecondary_total												
	PSYCHOP secondary												
	subscale total	.213	.073	.146	2.913	.004	.069	.356	.663	.189	.098	.445	2.245

9	UPPS_total Impulsivity	.064	.020	.114	3.151	.002	.024	.104	.256	.204	.106	.857	1.167
	UPPS total score												
	(Constant)	-6.520	3.281		-1.987	.048	-12.986	-.055					
	SES_EDUC What is the												
	highest level of education												
	you have completed?	-.461	.170	-.097	-2.720	.007	-.796	-.127	-.152	-.177	-.091	.893	1.120
	YSQ_cluster_disconn_reject												
	YSQ disconnection and	.105	.015	.399	7.179	.000	.077	.134	.769	.429	.241	.366	2.734
	rejection cluster												
	AASdepend_subscale AAS												
	depend subscale total score	-.857	.404	-.118	-2.123	.035	-1.653	-.062	-.589	-.139	-.071	.367	2.728
	AASclose_subscale AAS												
	closeness subscale total	.659	.380	.087	1.734	.084	-.090	1.407	-.423	.114	.058	.446	2.244
	score												
NOBAGS_total2	.114	.041	.115	2.762	.006	.033	.195	.451	.180	.093	.649	1.541	
ATVS_total Attitudes													
towards violence scale total													
score	-.035	.017	-.079	-2.113	.036	-.068	-.002	.193	-.138	-.071	.801	1.249	
HSNS_total HSNS total													
score	.085	.021	.216	3.955	.000	.042	.127	.740	.253	.133	.380	2.634	
Mach_total MACH total													
score	.070	.029	.107	2.430	.016	.013	.127	.568	.159	.082	.577	1.733	
Psychopathysecondary_total													
PSYCHOP secondary													
subscale total	.215	.073	.148	2.948	.004	.071	.359	.663	.191	.099	.446	2.243	
UPPS_total Impulsivity													
UPPS total score	.069	.020	.124	3.479	.001	.030	.109	.256	.224	.117	.891	1.123	
(Constant)	-5.371	3.228		-1.664	.097	-11.731	.989						

11	SES_EDUC What is the highest level of education you have completed?	-.515	.167	-.108	-3.078	.002	-.845	-.186	-.152	-.199	-.104	.924	1.082
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.102	.015	.385	6.969	.000	.073	.130	.769	.418	.235	.374	2.674
	AASdepend_subscale AAS depend subscale total score	-.490	.345	-.067	-1.419	.157	-1.170	.190	-.589	-.093	-.048	.506	1.976
	NOBAGS_total2	.109	.041	.111	2.653	.009	.028	.191	.451	.172	.090	.651	1.536
	ATVS_total Attitudes towards violence scale total score	-.037	.017	-.084	-2.232	.027	-.070	-.004	.193	-.146	-.075	.805	1.243
	HSNS_total HSNS total score	.083	.021	.211	3.865	.000	.041	.125	.740	.247	.130	.380	2.629
	Mach_total MACH total score	.077	.029	.117	2.665	.008	.020	.134	.568	.173	.090	.587	1.704
	Psychopathysecondary_total												
	PSYCHOP secondary subscale total	.208	.073	.144	2.845	.005	.064	.353	.663	.184	.096	.447	2.236
	UPPS_total Impulsivity UPPS total score	.074	.020	.132	3.737	.000	.035	.113	.256	.239	.126	.908	1.101
	(Constant)	-8.058	2.620		-3.076	.002	-13.219	-2.896					
	SES_EDUC What is the highest level of education you have completed?	-.488	.167	-.102	-2.929	.004	-.817	-.160	-.152	-.189	-.099	.937	1.068
	YSQ_cluster_disconn_reject												
	YSQ disconnection and rejection cluster	.109	.014	.413	8.025	.000	.082	.136	.769	.467	.271	.431	2.318

	NOBAGS_total2	.102	.041	.104	2.497	.013	.022	.183	.451	.162	.084	.660	1.515
	ATVS_total Attitudes towards violence scale total score	-.039	.017	-.087	-2.318	.021	-.071	-.006	.193	-.151	-.078	.808	1.238
	HSNS_total HSNS total score	.090	.021	.228	4.269	.000	.048	.131	.740	.270	.144	.399	2.503
	Mach_total MACH total score	.079	.029	.120	2.732	.007	.022	.136	.568	.177	.092	.588	1.700
	Psychopathysecondary_total PSYCHOP secondary subscale total	.221	.073	.152	3.030	.003	.077	.365	.663	.196	.102	.454	2.204
	UPPS_total Impulsivity UPPS total score	.074	.020	.132	3.731	.000	.035	.113	.256	.238	.126	.908	1.101
	(Constant)	-8.348	2.641		-3.160	.002	-13.552	-3.144					
	SES_EDUC What is the highest level of education you have completed?	-.430	.166	-.090	-2.584	.010	-.757	-.102	-.152	-.167	-.088	.959	1.043
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.111	.014	.421	8.112	.000	.084	.138	.769	.470	.277	.433	2.308
12	NOBAGS_total2	.081	.040	.083	2.018	.045	.002	.161	.451	.131	.069	.694	1.441
	HSNS_total HSNS total score	.088	.021	.226	4.177	.000	.047	.130	.740	.264	.143	.400	2.502
	Mach_total MACH total score	.073	.029	.112	2.531	.012	.016	.131	.568	.164	.086	.592	1.689
	Psychopathysecondary_total PSYCHOP secondary subscale total	.204	.073	.140	2.785	.006	.060	.348	.663	.180	.095	.458	2.182

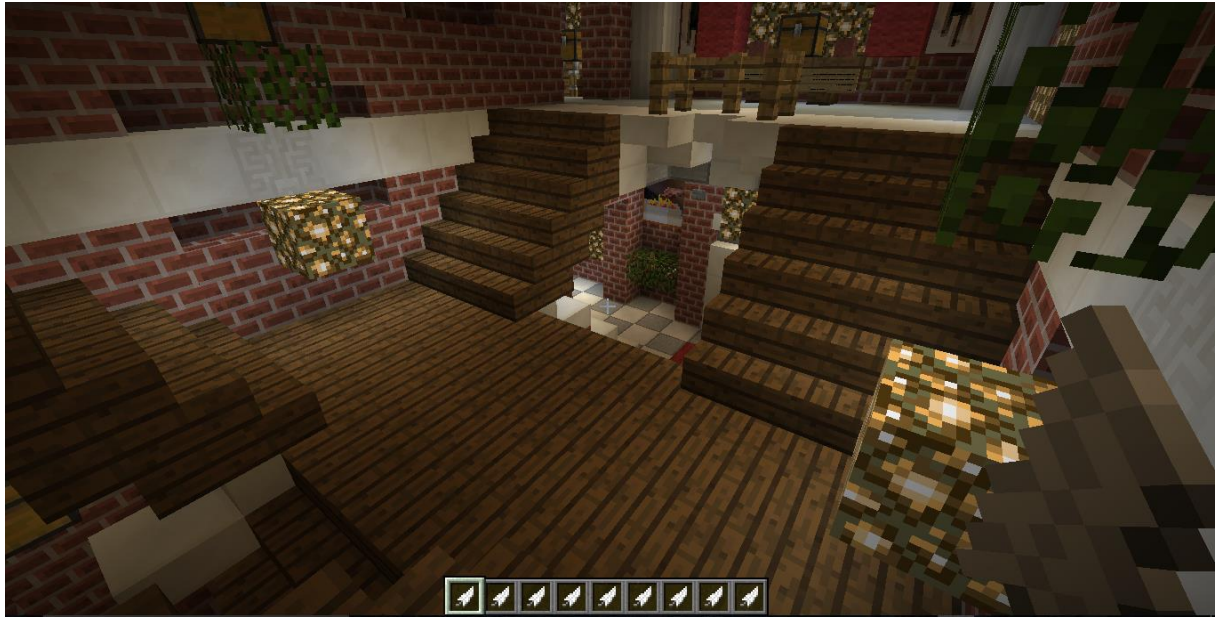
13	UPPS_total Impulsivity UPPS total score	.068	.020	.122	3.422	.001	.029	.107	.256	.219	.117	.924	1.082
	(Constant)	-8.658	2.654		-3.262	.001	-13.887	-3.429					
	SES_EDUC What is the highest level of education you have completed?	-.429	.167	-.090	-2.563	.011	-.759	-.099	-.152	-.166	-.088	.959	1.043
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.110	.014	.417	7.985	.000	.083	.137	.769	.464	.274	.434	2.305
	HSNS_total HSNS total score	.089	.021	.228	4.186	.000	.047	.131	.740	.264	.144	.400	2.501
	Mach_total MACH total score	.087	.028	.133	3.068	.002	.031	.143	.568	.197	.105	.626	1.596
	Psychopathysecondary_total PSYCHOP secondary subscales total	.249	.070	.172	3.549	.000	.111	.387	.663	.226	.122	.506	1.978
14	UPPS_total Impulsivity UPPS total score	.072	.020	.129	3.633	.000	.033	.112	.256	.232	.125	.935	1.070
	(Constant)	-11.500	2.440		-4.713	.000	-16.307	-6.692					
	YSQ_cluster_disconn_reject YSQ disconnection and rejection cluster	.108	.014	.407	7.736	.000	.080	.135	.769	.451	.269	.436	2.294
	HSNS_total HSNS total score	.096	.021	.244	4.464	.000	.053	.138	.740	.280	.155	.405	2.467
	Mach_total MACH total score	.080	.029	.123	2.808	.005	.024	.137	.568	.181	.098	.632	1.583

15	Psychopathysecondary_total												
	PSYCHOP secondary	.259	.071	.178	3.646	.000	.119	.398	.663	.232	.127	.507	1.973
	subscale total												
	UPPS_total Impulsivity	.078	.020	.139	3.885	.000	.038	.117	.256	.246	.135	.946	1.057
	UPPS total score												
	(Constant)	-8.966	2.300		-3.898	.000	-13.498	-4.435					
	YSQ_cluster_disconn_reject												
	YSQ disconnection and	.113	.014	.428	8.086	.000	.086	.141	.769	.467	.285	.444	2.250
	rejection cluster												
	HSNS_total HSNS total												
	score	.108	.021	.275	5.057	.000	.066	.149	.740	.313	.178	.422	2.368
	Psychopathysecondary_total												
	PSYCHOP secondary	.308	.070	.212	4.426	.000	.171	.446	.663	.277	.156	.541	1.849
	subscale total												
	UPPS_total Impulsivity	.076	.020	.135	3.727	.000	.036	.116	.256	.236	.131	.947	1.056
	UPPS total score												

a. Dependent Variable: hostility_aggression AQ hostility aggression subscale total

Appendix H – Study 2 Minecraft Map

Below is a screenshot of the mansion, highlighting that it had multiple levels for players to explore.



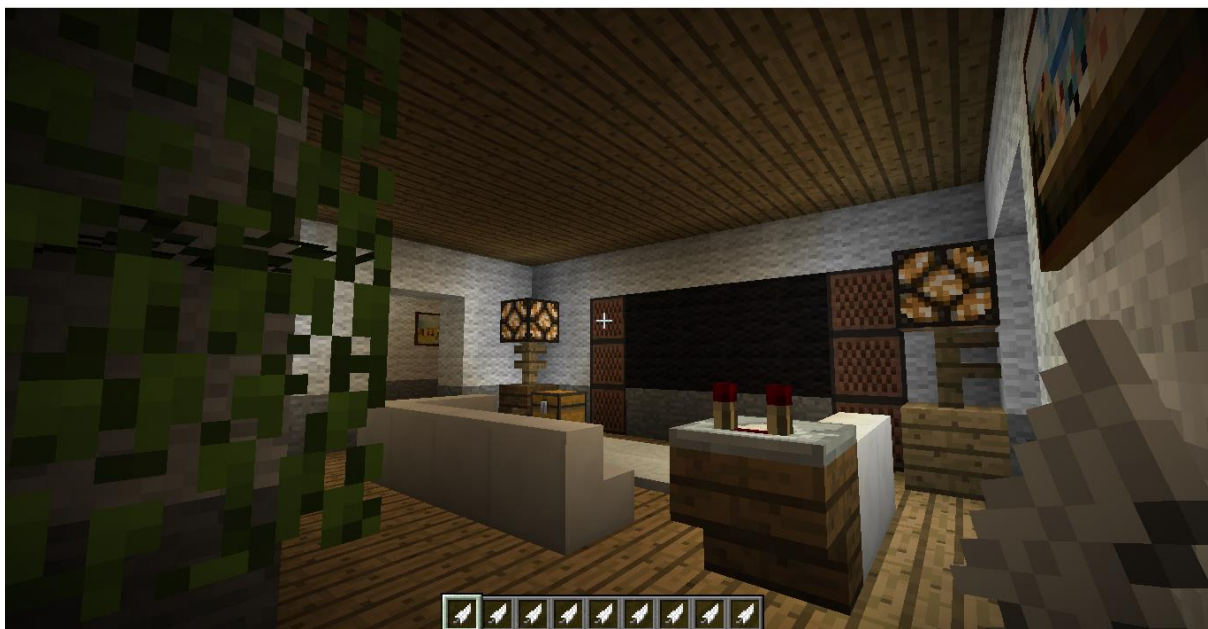
Appendix I – Study 2 Treasure Hunt and Fight Conditions

Note the settings for both game conditions are exactly the same, and the same controls are required to play in each. The only difference between the two is the presence of hostile creatures vs treasure chests. It worth noting that whilst the character in the fight condition was armed with a sword, the character in the treasure hunt condition carried a feather.

Fight Condition



Treasure Hunt Condition



Appendix J – Study 2 Tutorial





Appendix K – Study 2 Questionnaire**Feelings Checklist (Warburton et al., 2006)**

By selecting the appropriate number on the following scales, please rate how you are feeling *right now, at this moment*:

happy	1	2	3	4	5	6	7	sad
bothered	1	2	3	4	5	6	7	untroubled
trusting	1	2	3	4	5	6	7	untrusting
powerful	1	2	3	4	5	6	7	powerless
well-meaning	1	2	3	4	5	6	7	hostile
inactive	1	2	3	4	5	6	7	active
pleased	1	2	3	4	5	6	7	annoyed
worried	1	2	3	4	5	6	7	indifferent
ripped off	1	2	3	4	5	6	7	treated fairly
in control	1	2	3	4	5	6	7	not in control
unfriendly	1	2	3	4	5	6	7	friendly
lively	1	2	3	4	5	6	7	tired
bad	1	2	3	4	5	6	7	good
loved	1	2	3	4	5	6	7	unloved
drowsy	1	2	3	4	5	6	7	alert
dissatisfied	1	2	3	4	5	6	7	satisfied
able	1	2	3	4	5	6	7	unable
antagonistic	1	2	3	4	5	6	7	conciliatory
relaxed	1	2	3	4	5	6	7	tense
angry	1	2	3	4	5	6	7	serene
stimulated	1	2	3	4	5	6	7	unaroused
respected	1	2	3	4	5	6	7	ridiculed
ineffectual	1	2	3	4	5	6	7	effectual
contented	1	2	3	4	5	6	7	discontented
lethargic	1	2	3	4	5	6	7	energetic
afraid	1	2	3	4	5	6	7	unafraid
resentful	1	2	3	4	5	6	7	unresentful
agitated	1	2	3	4	5	6	7	calm
accepted	1	2	3	4	5	6	7	rejected
fragile	1	2	3	4	5	6	7	potent
frustrated	1	2	3	4	5	6	7	gratified

Appendix L – Study 2 Faux Consent Form

Department of Psychology
Faculty of Human Sciences
MACQUARIE UNIVERSITY NSW 2109
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Email: wayne.warburton@mq.edu.au

Dr Wayne Warburton
Lecturer, Department of Psychology

Information and Consent Form

Name of Project: Personality, Perception and Motor Coordination.

You are invited to participate in a study investigating the impact of sensory stimuli in several modalities (e.g., taste, smell, felt temperature and hearing) on motor coordination, and factors that may affect this relationship, including various thoughts and feelings.

This study is being conducted by 5th year psychology student Ms Chanelle Tarabay (chanelle.tarabay@students.mq.edu.au) as part of her Masters of Research project, under the supervision of Dr Wayne Warburton, from the Department of Psychology at Macquarie University (wayne.warburton@mq.edu.au, 02 9850 8643).

If you decide to participate, you will be asked to complete some questionnaires asking about your thoughts and feelings. Then, you may or may not be exposed to certain tastes, smells, sounds and temperatures and you will play a video game for roughly 10 minutes. The video game may contain 'mature' or mildly violent themes and it is possible that some of the sensory experiences may cause temporary discomfort. It is anticipated that this session should take 45 minutes to 1 hour. You will be allocated course credit for your involvement in this study.

PLEASE NOTE: It may be the case that the temperature, noise, smell and taste manipulations may cause some stress, discomfort or aggravate any pre-existing health concerns. If you feel you may be at risk, it is advisable that you withdraw participation now.

You are reminded that you may withdraw at any point. Should you become distressed, please inform the experimenter immediately. If distress occurs after the study, participants are encouraged to call Campus Wellbeing on 02 9850 7497 or Lifeline (a 24 hour counselling service) on **13 11 14**, or contact Dr Warburton (a registered psychologist) on **02 9850 8643** during working hours.

Any information or personal details gathered in the course of the study are confidential. No individual will be identified in any publication of the results. Access to the data will be restricted to Dr Wayne Warburton, Ms Chanelle Tarabay and possibly a statistical advisor from the Macquarie University Department of Psychology. A summary of the results will be posted on the 1st Year Psychology Notice Board, and more detailed results can be made available to you by an email request to Ms Chanelle Tarabay.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without penalty.

I have read and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name: _____
(Block letters)

Participant's Signature: _____ Date: _____

Investigator's Name: _____
(Block letters)

Investigator's Signature: _____ Date: _____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics and Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

(INVESTIGATOR'S [OR PARTICIPANT'S] COPY)

Appendix M – Study 2 Hot Sauce Paradigm Sheets**Participant Details Form (Demographics Sheet)***Please provide the following information*

- 1) Student ID number

--	--	--	--	--	--	--	--
- 2) Your Age:

--

 Years

--

 Months
- 2) Your country of birth: _____
- 3) Any completed trade, educational, or professional qualifications: _____

Please place a cross in the appropriate box(es) like this

X

- 4) Your gender: Female

--

 Male

--
- 5) Have you ever had any injuries to your: Nose? Yes

--

 No

--

 or Tongue? Yes

--

 No

--

(choose all applicable)

*If yes, please specify** _____

- 6) Is your sense of smell or taste impaired NOW? Yes

--

 No

--

*If yes, please specify** _____

- 7) Is your sense of hearing impaired NOW? Yes

--

 No

--

If yes, please specify _____**If there is insufficient space for any answers, please continue them in the box provided overleaf.**Questions continue on the following page.*

ID Please place a cross in the appropriate box(es) like this ☒

- 8) Please indicate any foods which you are unable to eat (for any reason).
(tick ALL applicable boxes)

Milk ☐
 Wheat ☐
 Eggs ☐
 Nuts ☐
 Seafood ☐
 Latex ☐
 Aspartame ☐

Sugar ☐
 Fruit or citric acid ☐
 Tartaric acid ☐
 Sesame seeds ☐
 Chillies ☐
 Tomatoes ☐
 Acidic foods ☐

Other - please specify

- 9) Could you be pregnant?

Yes ☐No ☐

- 10) Are you diabetic?

Yes ☐No ☐

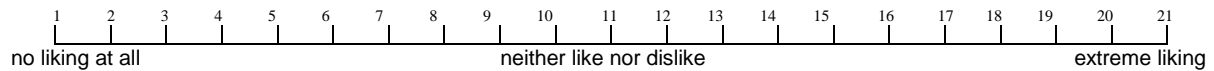
Any answers continued from the previous page may go here. Please note the relevant question number.

If this does not apply, please leave this section blank and move on to the next sheet.

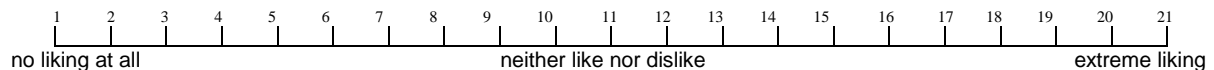
Taste Preference Scale

For each taste listed, please circle the number on the relevant scale, which best indicates how much you like or dislike that type of taste.

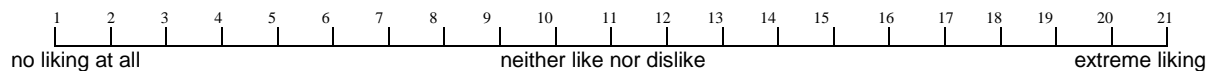
1) Sour tastes *e.g. lemon juice, vinegar* Allergy? ☐



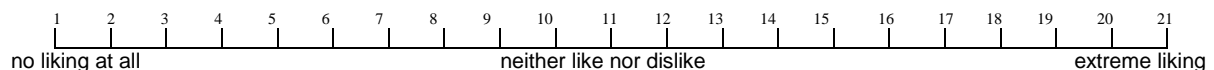
2) Bitter tastes *e.g. tonic water, quinine* Allergy? ☐



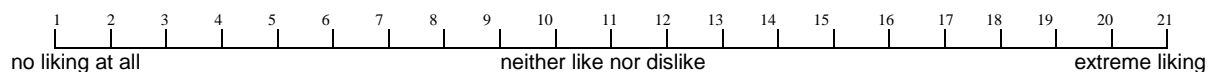
3) Salty tastes *e.g. salty chips, salted nuts* Allergy? ☐



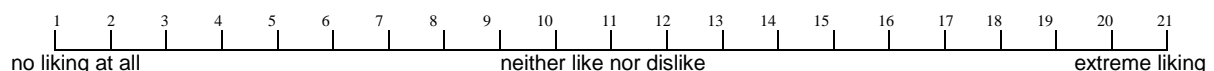
4) Sweet tastes *e.g. honey, lollies, sweet cakes* Allergy? ☐



5) Hot / spicy tastes *e.g. chilli sauce, hot curries* Allergy? ☐



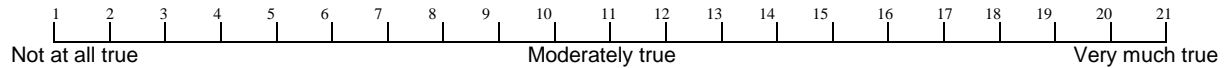
6) Dry tastes *e.g. plain crackers, unbuttered bread* Allergy? ☐



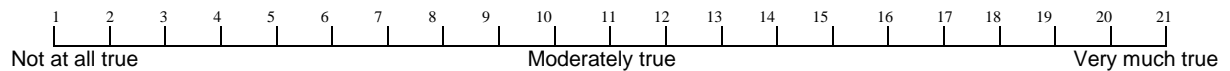
Taste Evaluation Scale

This scale measures your reaction to one particular taste. After consuming the whole sample for that taste, please complete the following questionnaire. For each statement listed, circle the number on the scale below it, which best indicates the degree to which that statement reflects your experience of the taste you sampled.

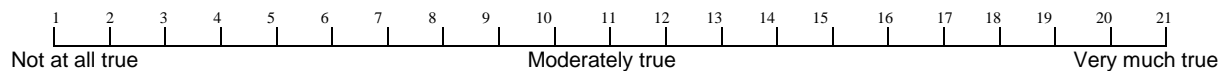
1) The taste of the sample was to my liking.



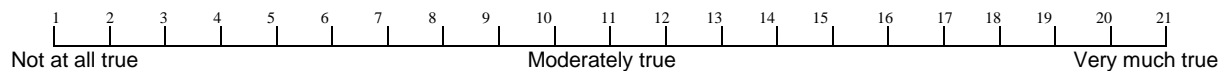
2) I would actively seek out a food with a similar taste.



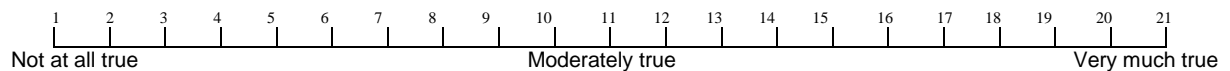
3) I found the taste of the sample unpleasant.



4) It is hard to describe the taste of the sample in words.



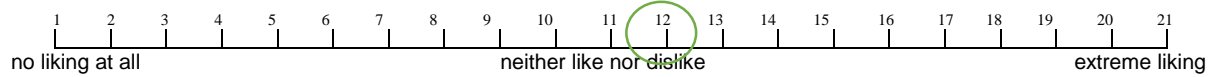
5) The act of tasting the sample aroused in me feelings that are hard to describe.



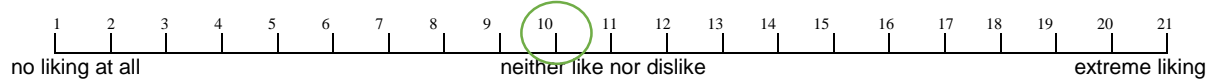
Taste Preference Scale

For each taste listed, please circle the number on the relevant scale, which best indicates how much you like or dislike that type of taste.

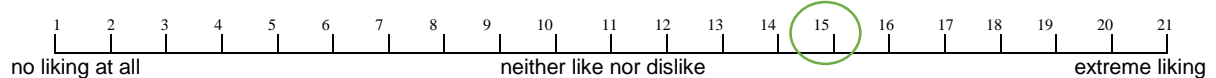
1) Sour tastes *e.g. lemon juice, vinegar* Allergy? ☐



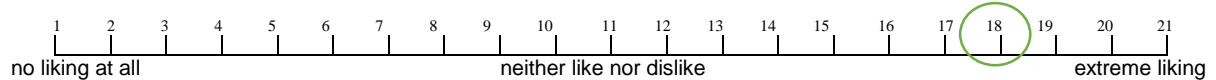
2) Bitter tastes *e.g. tonic water, quinine* Allergy? ☐



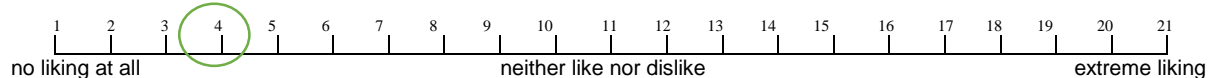
3) Salty tastes *e.g. salty chips, salted nuts* Allergy? ☐



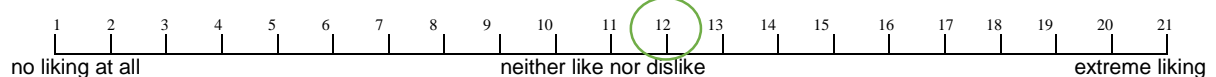
4) Sweet tastes *e.g. honey, lollies, sweet cakes* Allergy? ☐



5) Hot / spicy tastes *e.g. chilli sauce, hot curries* Allergy? ☐



6) Dry tastes *e.g. plain crackers, unbuttered bread* Allergy? ☐



INSTRUCTIONS

In this experiment, it is extremely important that the experimenters are blind to the food samples given to each student, so that they cannot give verbal or non-verbal cues to participants about the tastes about to be sampled (and thus bias responses).

Several participants will be doing these taste evaluations concurrently, and each will be asked to package a sample for one other person doing this study. It is important that this is done whilst the experimenter is absent. Samples will be collected and distributed according to coded ID numbers, and then participants will be asked to consume the whole sample and to evaluate its taste. All aspects of the packing will be anonymous, and the experimenters will never see any of the packaged samples.

You will be asked to choose a food type from a hat.

The experimenter will then bring you the matching food sample and packing materials. On receiving the sample, you should observe the following steps:

- 1) Make sure the experimenter has left the room.
- 2) There is a food preference sheet enclosed in an envelope. It indicates the preference of another student for various tastes and has an ID number in the bottom right hand corner. It has been filled out by the participant whose sample you will package.
- 3) Read through the sheet, and note if an allergy is indicated for type of sample you will be packaging. (If this is the case, call the experimenter back immediately).
- 4) Take the empty Styrofoam cup on the tray and note the student's ID number **ON THE BOTTOM OF THE CUP** with the pen provided.
- 5) Return the food preference sheet to the envelope and lay the envelope number down.
- 6) Eat/drink a tiny piece of the sample food to verify its taste.
- 7) All quantities of the sample food are useful. From the larger sample provided, put into the cup as much or as little of the food sample as you want to.
- 8) Seal the cup with the lid provided. Please make sure that no part of the sample or the recipient number are visible. It is vital that anonymity and blindness to the sample are maintained.
- 9) When you are finished, call the experimenter back by knocking on the door of the room that you are in.

'Hot and Spicy Sauce' (Manipulation Check)

(A) Current feeling

Please answer the following question:

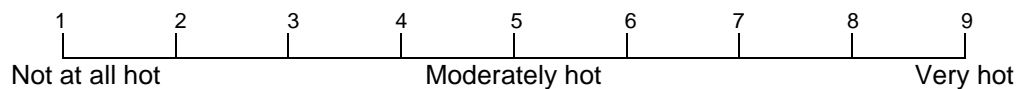
What are feeling RIGHT NOW?

Write down the FIRST WORD that comes to mind.

.....

(B) 'Hot and Spicy Sauce' Rating Scale

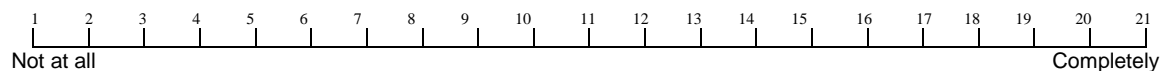
Please circle the number on the scale below which best indicates how 'hot' you found the 'hot and spicy sauce' to be.



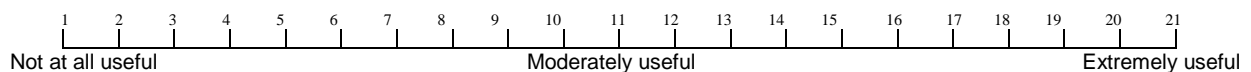
(C) Use of the Taste Preference Scales

Please answer the questions below by circling a number on the relevant scale.

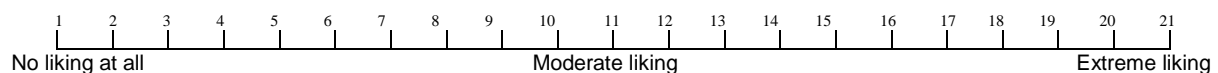
i) To what extent did you use the Taste Preference Inventory when giving out the food sample to the other person?



ii) How useful do you think the Taste Preference Inventory was when giving out the food sample?



iii) Using the scale below, indicate the extent to which the person you gave the food sample to liked that kind of food.



Appendix N – Study 2 Debrief Forms

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Faculty of Human Sciences
MACQUARIE UNIVERSITY NSW 2109
Phone: +61 (0)2 9850 8643
Fax: +61 (0)2 9850 8062
Email: wayne.warburton@mq.edu.au

Dr Wayne Warburton
Lecturer, Department of Psychology

Debrief Information and Consent Form

Name of Project: Exploring the Cumulative Effects of Multiple Risk Factors for Aggression.

You were invited to participate in a study investigating the cumulative effects of various risk factors for aggression. That is, this study examined whether experiencing a number of factors known to cause mild aggression results in an increased risk for mild aggression. Related factors include violent media exposure and unpleasant environmental perceptual assaults.

This study was conducted by 5th year psychology student Ms Chanelle Tarabay (chanelle.tarabay@students.mq.edu.au) as part of her masters of research project, under the supervision of Dr Wayne Warburton, from the Department of Psychology at Macquarie University (wayne.warburton@mq.edu.au, 02 9850 8643).

As a participant, you were asked to complete the second part of a two part study. In this part of the study conducted, you answered questionnaires about your thoughts and feelings. You also tasted and rated a food sample and played a video game for 10 minutes. The video game may have contained 'mature' or violent themes. You were also asked to package a food sample for another participant. This session should have taken approximately 45 minutes to 1 hour, and you will be allocated course credit for your involvement. The first part of this study was completely online and was undertaken by an international sample of participants. The questionnaires asked about various personality and demographic factors, past exposure to violent media, general mental health, and some attitudes and beliefs.

You were able to withdraw at any point if you felt distress or discomfort. If you are currently distressed, please inform the experimenter immediately. If distress occurs after the study, participants are encouraged to call Campus Wellbeing on 02 9850 7497 or Lifeline (a 24 hour counselling service) on 13 11 14, or contact Dr Warburton (a registered psychologist) on 02 9850 8643 during working hours.

Any information or personal details gathered in the course of the study are confidential. No individual will be identified in any publication of the results. Access to the data will be restricted to Dr Wayne Warburton, Ms Chanelle Tarabay and possibly a statistical advisor from the Macquarie University Department of Psychology. A summary of the results will be posted on the 1st Year Psychology Notice Board, and more detailed results can be made available to you by an email request to Ms Chanelle Tarabay.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without forfeiting course credit.

I have read and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name: _____
(Block letters)

Participant's Signature: _____ Date: _____

Investigator's Name: _____
(Block letters)

Investigator's Signature: _____ Date: _____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics and Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

(INVESTIGATOR'S [OR PARTICIPANT'S] COPY)

What this experiment was really about

First, we apologise that this experiment necessarily contained deception. This was deemed necessary in order to maximise the likelihood that participants would make ‘natural’ responses.

Background

Whilst it seems that many risk factors (such as heat, smells and triggers for aggression) increase the likelihood of mildly aggressive behaviour in most (if not all people), it is not yet known if the risk for aggression increases exponentially with the addition of further risk factors known to elicit mild aggression.

This study

In this study we tried to answer this question by administering surveys measuring various personal and environmental factors, as well as by manipulating certain situational risks, such as temperature and smell. This was part one of a wider study that also includes a secondary component that was entirely online. Surveys were administered to a sample of participants recruited online from the United States, which assessed various personality and demographic factors, past exposure to violent media, general mental health, attitudes and beliefs. In this online component, aggression was measured by your responses to a measure of trait aggression, the Aggression Questionnaire (Buss and Perry, 1992). In the face to face component you participated in, aggression was measured as the amount of hot chilli sauce allocated during the sample packaging part of the experiment. These are widely used measures of aggressive behaviour used across the world.

It is important to note that the types of effects tested in this study occur for all participants. For example, in previous experiments of a similar type, participants exposed to violent media have an increased likelihood of being mildly aggressive, with no type of person being ‘immune’ (see Anderson et al, 2003). A higher allocation of hot sauce does not reflect negatively on any participants, as it is a mild form of aggression that has been tested and such responses are well within the normal range of human responding for all people.

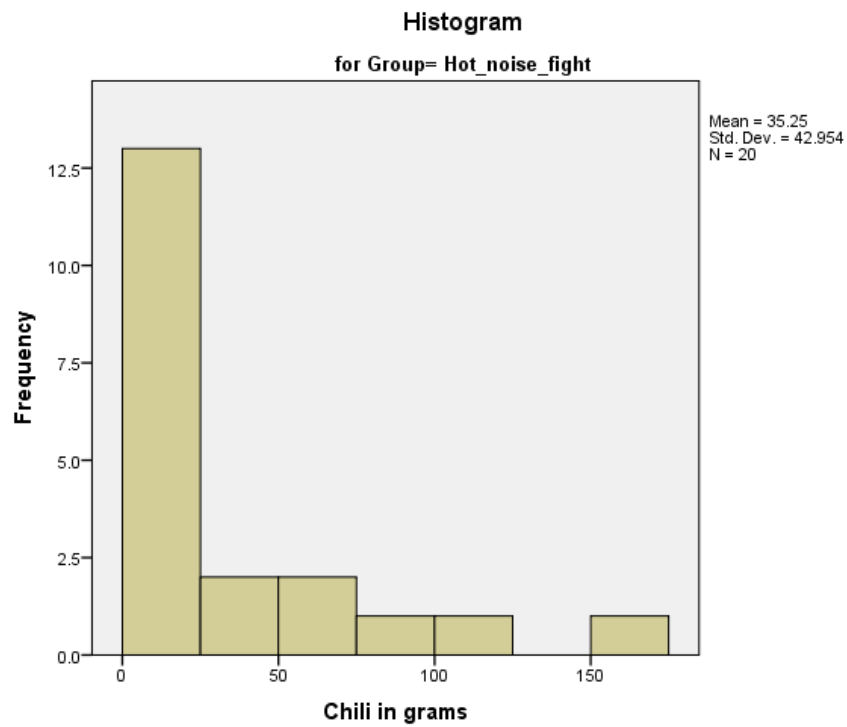
Again, we apologise for the deception that was used in this experiment, but hope you will understand that this deception was necessary to produce unbiased responses. You can, of course, withdraw consent now, and your data will not be used.

**We sincerely thank you for your
participation**

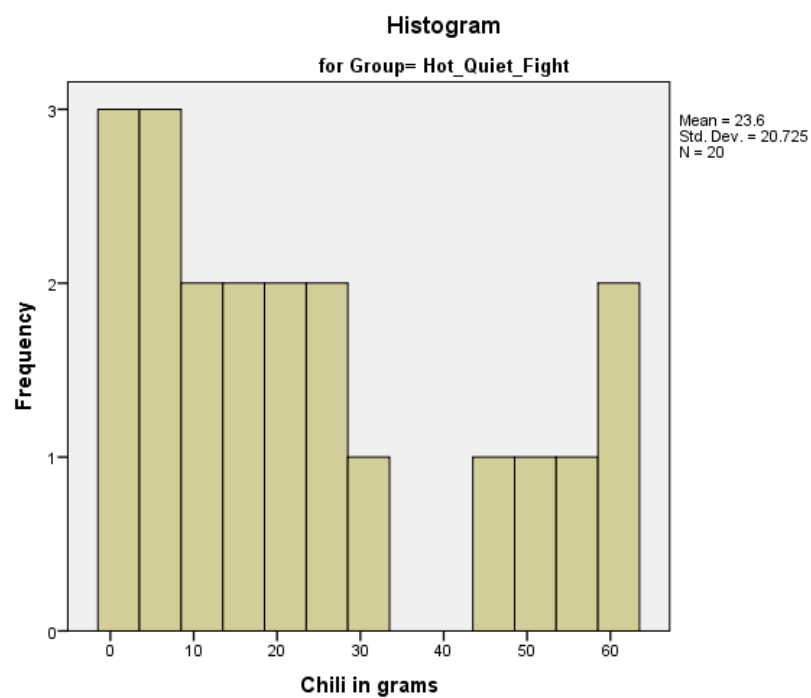
Appendix O – Study 2 Violated Assumptions

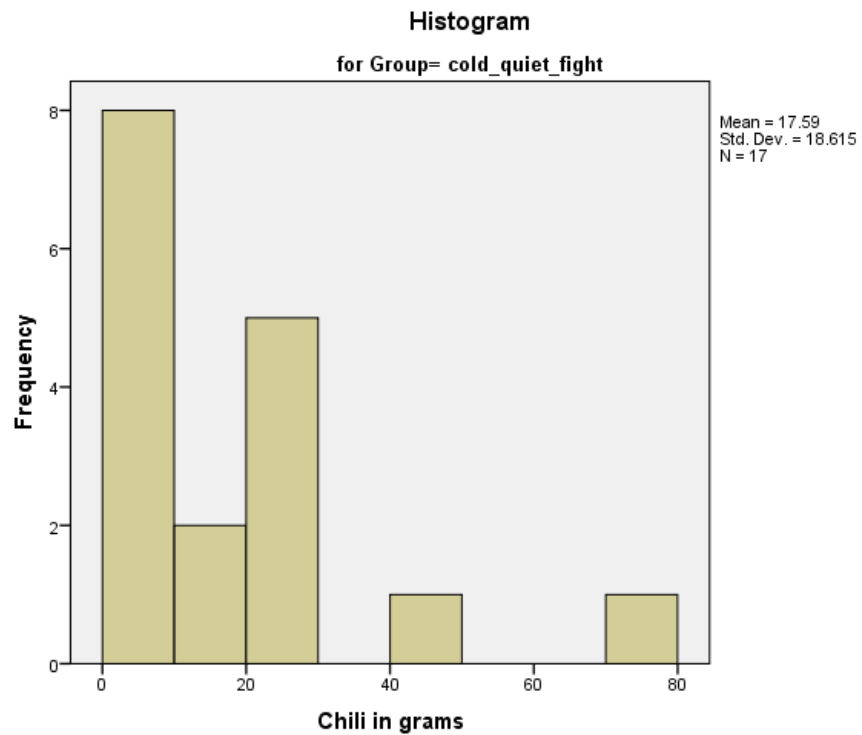
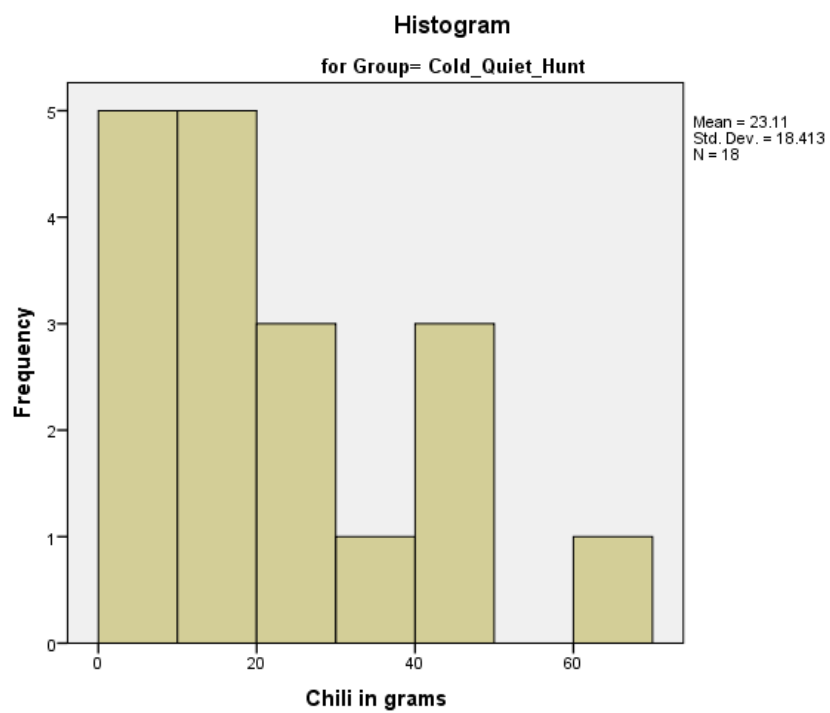
Below are the distributions for hot sauce allocation, group. Note that all are severely skewed, thus violating the assumption of normality.

Three Risk Factor Group



Two Risk Factor Group



Single Risk Factor Group**No Risk Factor Group**

Appendix P – Study 2 Transformations Output

Below is the output for the Log10 transformed hot sauce variable. Note that statistical outcomes are similar to those for the untransformed hot sauce variable.

Overall F test outcome

Tests of Between-Subjects Effects

Dependent Variable: weight00 L=zero

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	1.172 ^a	5	.234	1.039	.402	.070	5.195	.349
Intercept	14.591	1	14.591	64.656	.000	.484	64.656	1.000
Group	.379	3	.126	.560	.643	.024	1.680	.160
Gender	.587	1	.587	2.599	.111	.036	2.599	.356
Frustrating	.054	1	.054	.241	.625	.003	.241	.077
Error	15.571	69	.226					
Total	124.039	75						
Corrected Total	16.743	74						

a. R Squared = .070 (Adjusted R Squared = .003)

b. Computed using alpha = .050

Contrast: 3 risk vs 2 risk

Contrast Results (K Matrix)^a

Contrast		Dependent Variable
		weight00 L=zero
L1	Contrast Estimate	.091
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	.091
	Std. Error	.150
	Sig.	.547
	95% Confidence Interval for Lower Bound	-.209
	Difference Upper Bound	.391

a. Based on the user-specified contrast coefficients (L') matrix: 3 vs 2

Test Results

Dependent Variable: weight00 L=zero

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	.083	1	.083	.366	.547	.005	.366	.092
Error	15.571	69	.226					

a. Computed using alpha = .050

Contrast: 2 risk vs 1 risk**Contrast Results (K Matrix)^a**

Contrast		Dependent Variable
		weight00 L=zero
L1	Contrast Estimate	.120
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	.120
	Std. Error	.163
	Sig.	.464
	95% Confidence Interval for Lower Bound	-.205
	Difference Upper Bound	.445

a. Based on the user-specified contrast coefficients (L') matrix: 2 vs 1

Test Results

Dependent Variable: weight00 L=zero

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	.123	1	.123	.543	.464	.008	.543	.112
Error	15.571	69	.226					

a. Computed using alpha = .050

Contrast: 1 risk vs 0 risk**Contrast Results (K Matrix)^a**

Contrast		Dependent Variable
		weight00 L=zero
L1	Contrast Estimate	-.058
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	-.058
	Std. Error	.189
	Sig.	.759
	95% Confidence Interval for Lower Bound	-.435
	Difference Upper Bound	.318

a. Based on the user-specified contrast coefficients (L') matrix: 1 vs 0

Test Results

Dependent Variable: weight00 L=zero

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	.021	1	.021	.095	.759	.001	.095	.061
Error	15.571	69	.226					

a. Computed using alpha = .050

Contrast: 3 risk vs 1 and 2 and 0 risk**Contrast Results (K Matrix)^a**

Contrast		Dependent Variable
		weight00 L=zero
L1	Contrast Estimate	.455
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	.455
	Std. Error	.417
	Sig.	.280
	95% Confidence Interval for Lower Bound	-.378
	Difference Upper Bound	1.287

a. Based on the user-specified contrast coefficients (L') matrix: 3 vs 012

Test Results

Dependent Variable: weight00 L=zero

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	.268	1	.268	1.187	.280	.017	1.187	.189
Error	15.571	69	.226					

a. Computed using alpha = .050

Appendix Q – Ethics Approval Letter

Office of the Deputy Vice-Chancellor
(Research)

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Macquarie University
NSW 2109 Australia
T: +61 (2) 9850 4459
<http://www.research.mq.edu.au/>
ABN 90 952 801 237



21 April 2015

Dr Wayne Warburton
Department of Psychology
Faculty of Human Sciences
Macquarie University
NSW 2109

Dear Dr Warburton

Reference No: 5201500081

Title: *Cumulative effects of risk factors for aggression*

Thank you for submitting the above application for ethical and scientific review. Your application was considered by the Macquarie University Human Research Ethics Committee (HREC (Human Sciences & Humanities)) at its meeting on 27 February 2015 at which further information was requested to be reviewed by the HREC (Human Sciences and Humanities) Executive.

The requested information was received with correspondence on 20 March 2015.

The HREC (Human Sciences and Humanities) Executive considered your responses at its meeting held on 27 March 2015.

I am pleased to advise that ethical and scientific approval has been granted for this project to be conducted at:

- Macquarie University

This research meets the requirements set out in the *National Statement on Ethical Conduct in Human Research* (2007 – Updated March 2014) (the *National Statement*).

This letter constitutes ethical and scientific approval only.

Standard Conditions of Approval:

1. Continuing compliance with the requirements of the *National Statement*, which is available at the following website:

<http://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research>

2. This approval is valid for five (5) years, subject to the submission of annual reports. Please submit your reports on the anniversary of the approval for this protocol.

3. All adverse events, including events which might affect the continued ethical and scientific acceptability of the project, must be reported to the HREC within 72 hours.

4. Proposed changes to the protocol must be submitted to the Committee for approval before implementation.

It is the responsibility of the Chief investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.

Should you have any queries regarding your project, please contact the Ethics Secretariat on 9850 4194 or by email ethics.secretariat@mq.edu.au

The HREC (Human Sciences and Humanities) Terms of Reference and Standard Operating Procedures are available from the Research Office website at:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics

The HREC (Human Sciences and Humanities) wishes you every success in your research.

Yours sincerely



Dr Karolyn White

Director, Research Ethics & Integrity,

Chair, Human Research Ethics Committee (Human Sciences and Humanities)

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research* (2007) and the CPMP/ICH Note for Guidance on Good Clinical Practice.

Details of this approval are as follows:**Approval Date:** 21 April 2015

The following documentation has been reviewed and approved by the HREC (Human Sciences & Humanities):

Documents reviewed	Version no.	Date
Macquarie University Ethics Application Form	2.3	July 2013
Correspondence from Dr Wayne Warburton responding to the issues raised by the HREC (Human Sciences and Humanities)		Received 20/3/2015 & 20/4/2015
SONA Advertisement	2	20/4/2015
MTURK Advertisement	2	19/3/2015
Online MQ Participant Information and Consent Form (PICF) entitled ' <i>Personality Trait Interactions</i> '	2	19/3/2015
Online Debrief Form entitled ' <i>Exploring the Cumulative Effects of Multiple Risk Factors for Aggression</i> '	2	19/3/2015
MQ Participant Information and Consent Form (PICF) - ' <i>Personality, Perception and Motor Coordination</i> '	2	19/03/2015
MQ Debrief Information and Consent Form entitled ' <i>Exploring the Cumulative Effects of Multiple Risk Factors for Aggression</i> '	2	19/3/2015
Demographics Questionnaire	2	19/3/2015
Participant Details Form – Assessment of Allergies	2	19/3/2015