Examining the Temporal Stability of Evaluative Attitudes Toward Violence

by

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Abstract

Evaluative attitudes toward violence are related to violent behaviour and are important predictors of violence. The temporal stability of evaluative attitudes toward violence has not yet been examined. Attitudes have been shown to have a high degree of stability, but with the potential to change through manipulation or intervention. I assessed for the degree of stability of evaluative attitudes toward violence using the Evaluation of Violence Questionnaire (EVQ) across four days, four weeks, and three months. I found participants’ EVQ scores to be highly stable across all assessments; however, the results from the weekly and monthly assessments lacked power due to small sample sizes. The results from this study do, however, give preliminary evidence that evaluative attitudes toward violence are highly stable in the short-term, and potentially also in the long-term. Future research is needed to better understand the degree of stability of evaluative attitudes toward violence in the long-term.

*Keywords:* attitudes, violence, temporal stability.
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Examining the Temporal Stability of Evaluative Attitudes Toward Violence

Attitudes are strongly related to and may be important predictors of behaviour (Glasman & Albarracin, 2006; Kraus, 1995). In particular, violent attitudes have been shown to be strongly related to violent behaviour (Eckhardt et al., 2012; Polaschek et al., 2010; Robertson & Murachver, 2007), and they are hypothesized as being important factors in explaining and predicting violence (e.g., Anderson & Bushman, 2002; Andrews & Bonta, 2010; Bandura, 1973).

The influence of an attitude on behaviour is itself influenced by the attitude’s degree of stability (Cooke & Sheeran, 2004; Glasman & Albarracin, 2006). The more stable the attitude, the more likely is it to influence behaviour. This has specifically been demonstrated in the forensic psychology literature, wherein a high degree of stability in attitudes supportive of general criminality, or more specific types of criminality (e.g., violent, sexual), are predictive of future criminal behaviour (e.g., Banse et al., 2013; Helmus et al., 2012).

The purpose of this thesis is to examine the temporal stability of evaluative attitudes toward violence. Evaluative attitudes toward violence refer to the specific construct of evaluations of violence (Nunes et al., 2021). Nunes et al. (2015) have discussed how, in the violence literature, the term “violent attitudes” may be used to refer to a wide range of cognitions, which may include evaluations of violence, but not exclusively. For example, beliefs, justifications, excuses, rationalizations, and neutralizations of violence be included in this broader “violent attitudes” definition in violence literature (see Nunes et al., 2015, 2021). In the social-psychological literature, attitudes are conceptualized as evaluations (i.e., positive or negative) of psychological objects (such as people, things, or behaviours); it is with this conceptualization that Nunes et al. (2021) defined *evaluative* attitudes toward violence.
The distinction between these other cognitions and attitudes as evaluations is important given their differential associations with behaviour, and in particular, violent behaviour (e.g., Gannon et al., 2007; Maruna & Copes, 2005). The constructs that are referred to as “violent attitudes” in the violence literature are related to and predictors of violence (see Nunes et al., 2015), but because they encapsulate a wide range of cognitions, it is unclear whether the same construct is consistently being referred to across the literature, or whether it is being consistently and uniformly measured. Consequently, the understanding of how violent attitudes behave, as well as evidence of their relationship with violent behaviour, is varying and at times inconsistent (e.g., Woessner & Shwelder, 2004; Polaschek et al., 2010).

Evaluative attitudes toward violence are related to violent behaviour (Nunes et al, 2022), and have been shown to change through manipulation (Nunes et al., 2021); however, the temporal stability of evaluative attitudes toward violence has not yet been examined. Given the influence of attitude stability on the attitude-behaviour relationship, the typical rate of change of evaluative attitudes toward violence may inform their influence on violent behaviour.

**Measuring Attitude Change and Stability**

Correlation coefficients are widely used to measure an attitude’s degree of stability. As argued by Batista-Foguet and Saris (1997), observed differences in a construct over time that are due to random error are not informative of systematic change. Many correlation coefficients do not account for this random error, and so it is unclear whether observed differences of a construct are due to chance, mistake, or actual change. Fisher (1954) originally developed the intraclass correlation coefficient (ICC) as a modification of Pearson’s correlation coefficient to specifically account for this variance. In its computation, Pearson’s correlation coefficient accounts for the covariance between two variables and their standard deviations. The ICC, on the other hand,
accounts for both the inter- and intra-subject variability, as well as residual variability in its computation. This means that the differences that are attributable to those between participants and across the same participants are being accounted for in its computation, in addition to random measurement error. Thus, the ICC allows for a more accurate and less biased estimate of stability.

Another common technique to measure attitude stability is in computing the absolute value of differences between attitude ratings at different time points (e.g., Erber et al., 1995; Karpen et al., 2012; Keele & Wolak, 2006; Luttrell et al., 2016). This approach can be informative if the same measurement is used at all time intervals; however, it is not as easily compared across measurements or studies. For example, if an attitude is measured using a 10-point compared to a 4-point scale, any attitude change or lack thereof will be difficult to compare. To determine whether there is a significant degree of change, attitude scores between time points can be compared using significance tests. For example, t-tests may be used to examine the degree of difference in scores across two time points. To examine the degree of change across multiple time points, a repeated-measures ANOVA allows for an unbiased method to detect change over multiple assessments (Minitab, 2015). The repeated measures ANOVA is highly powered, given that it accounts for inter- and intra-subject variability, as well as measurement error, just as the ICC does. Similarly, a repeated-measures ANOVA can assess for effect over time (Minitab, 2015).

In measuring attitude change, however, a non-significant result does not necessarily indicate attitude stability. The reverse is also true – non-stable results do not necessarily indicate significant change. Because significance tests, such as a t-test or a repeated measures ANOVA, assesses for differences, not similarities, a significant result (e.g., $p < .05$) may indicate that there
was a real difference in attitude across assessments, but it is not accurate to conclude that a non-significant test of attitude change (e.g., \( p > .05 \)) instead indicates attitude stability. The same is true for correlation coefficients, which assess for consistency or agreement, but not change. A significant correlation coefficient (e.g., \( p < .05 \)) suggests that there is a strong degree of similarity across assessments, but it is not accurate to conclude that a non-significant coefficient (e.g., \( p > .05 \)) instead indicates attitude change. This distinction is important and demonstrates the need to incorporate the proper methodology for the research question at hand.

A more rigorous approach to assess for attitude stability is through the incorporation of structural equational modelling (SEM). The use of correlation coefficients to assess for stability has been criticized because the effects of measurement error and actual instability are not always separated in their computations (e.g., Heise, 1969; Wiley & Wiley, 1970). Coleman (1968) demonstrated that it is possible to separate measurement error and actual instability analytically when the construct of interest is assessed at three or more time points. Following Coleman’s (1968) approach, Heise (1969) proposed the use of path analysis as a more accurate detection of stability, while Wiley and Wiley (1970) furthered this into SEM.

Wiley and Wiley (1970) have specified distinguishing between two models: a measurement model and a causal model. The measurement model is meant to represent error, both at the construct and measurement level. Specifically, it assumes that measurement error is random, and that the construct of interest is constant across assessments, except in the presence of true change. The causal model is meant to represent the processes that are involved in the change of a construct. Specifically, this model assumes that the variances of the construct are constant over time. Heise (1969) alternatively has suggested specifying the causal model in such a way that instead assumes that the reliabilities of the construct are constant over time, rather
than the variances. The resulting estimated latent parameters of the models represent the degree of stability of the construct. These *stability coefficients* can range from 0 to 1.00, with larger values indicating a greater degree of stability (see Wiley & Wiley, 1970 for an in-depth explanation of this method).

**Temporal Stability of Attitudes**

Attitudes, in general, tend to be highly stable, but they do have the potential to change (Bodenhausen & Gawronski, 2013; Eagly & Chaiken, 2005; Gawronski & Bodenhausen, 2006; Petty & Krosnick, 1995). Ample research has shown evidence of attitude stability across an array of psychological objects and topics, and over both the short- and long-term (see Table 1 for a summary). For example, attitudes toward Christianity have been shown to exhibit a high degree of stability across 1-, 4-, and 5-week intervals ($r = .92, .98, .94$; Francis et al., 2009; Lewis et al., 2005; McGuckin et al., 2006). Similarly, attitudes toward different political topics are consistently shown to be highly stable, across time periods as short as 1 month ($r = .81, .80$) to as long as 7 years (stability coefficients ranging from 0.94, 1.00; Alwin & Krosnick, 1991; Brody, 1986; Feitosa & Galais, 2020; Gawronski et al., 2017; Judd & Milburn, 1980; Krosnick & Alwin, 1989; Putnam et al., 1979). Attitudes toward physical activity and related health behaviours have also been shown to exhibit a high degree of stability over a range of six weeks ($r = .70$) to six months between assessments ($r = .51$; Chatzisarantis et al., 2005; Conner et al., 2021). Overall, this evidence suggests that attitudes are relatively stable, regardless of the psychological object, and in both the short- and long-term.

At the same time, some attitudes have been shown to lack stability. For example, Charlesworth and Banaji (2019) followed a sample of four million U.S. citizens from 2004 to 2016. Participants were assessed continuously on a variety of politically relevant topics, which
Table 1

*Attitude Stability in Past Research Across Weekly, Monthly, and Yearly Assessments*

<table>
<thead>
<tr>
<th>Range of time between assessments</th>
<th>Range of correlation coefficients</th>
<th>Average correlation coefficient</th>
<th>Range of stability coefficients</th>
<th>Average stability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly&lt;sup&gt;a&lt;/sup&gt;</td>
<td>10 days to 4 weeks</td>
<td>.56 to .98</td>
<td>.84</td>
<td>-</td>
</tr>
<tr>
<td>Monthly&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5 weeks to 12 months</td>
<td>.47 to .96</td>
<td>.71</td>
<td>.87 to 1.00</td>
</tr>
<tr>
<td>Yearly&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1 to 7 years</td>
<td>.14 to .82</td>
<td>.43</td>
<td>.85 to 1.00</td>
</tr>
</tbody>
</table>

*Note.* Values as presented in published studies.

<sup>a</sup> Included studies: Boroumandfar et al., 2016; Francis et al., 2009; Godin et al., 1987; Lewis et al., 2005; Walters, 2002.<sup>b</sup> Included studies: Conner et al. 2000, 2002, 2021; Chatzisarantis et al., 2005; Degeest et al. 2018; Gawronski et al., 2017; Krosnick & Alwin, 1989; McGuckin et al., 2006; Merwin & DiVesta, 1959; Smith, 1990; Walters, 2002.<sup>c</sup> Included studies: Alwin & Krosnick, 1991; Anttonen, 1969; Feitosa & Galais, 2020; Godin et al., 2005; Judd & Milburn, 1980; Krosnick & Alwin, 1989; Putnam, 1979; Schaubroeck et al., 1996; Wright, 2013; Zuroff et al., 1990.

have changed in their controversial strength over time. Specifically, participants were assessed on both their explicit and implicit attitudes toward sexuality, race, and more specifically, skin-tone, age, disability, and body weight. Across all topics, participants’ explicit attitudes changed toward neutrality over time.

Kiley and Vaisey (2020) showed a similar level of attitude instability across relevant cultural topics over eight years. They posit, however, that this attitudinal change is less so at the
individual level, but more so at a cultural level. In general, they show that younger cohorts are more likely to have any changes in their attitudes than older cohorts. They also show that attitudes toward gender, family, race, and institutions changed the least across all cohorts, perhaps suggesting that attitudes toward these constructs are settled by adulthood and should remain stable through the remainder of the lifespan. On the other hand, attitudes toward abortion, specifically in the case of rape or poverty, toward the morality of premarital and adolescent sex, toward the ideal number of children in a family, and toward total obedience of children to adults were consistently actively changing, perhaps suggesting that attitudes toward these constructs are never fully realized. Kiley and Vaisey (2020) suggest that their results indicate cultural, rather than individual, attitudinal change. They suggest that this change happens slowly, and primarily through the mechanism of cohort succession. In other words, the change in attitudes at the societal level is due to older cohorts dying out and younger cohorts becoming adults. They suggest that real, persistent attitude change is uncommon among adults, though not impossible.

**Attitude Stability Across the Lifespan**

Many well supported theories of attitude change suggest that it is most likely to occur in early adulthood, with stabilization becoming stronger with age (e.g., Alwin & Krosnick, 1991; Visser & Krosnick, 1998). Krosnick and Alwin (1989) examined the degree of stability in attitudes toward several political topics over an 8-month and a 4-year period. Across both time periods, attitudes exhibited a relatively high degree of stability ($r_{1,2} = .63, .47$, with stability coefficients of $.94$ and $.91$). The caveat to this, however, was that the youngest (aged 18-25 years) and oldest (aged 66-83 years) age groups were significantly less stable across time periods ($r_{1,2} = .60, .44$, with stability coefficients of $.87$ and $.85$ for the youngest group; $r_{1,2} = .56, .43$ with stability coefficients of $.94$ and $.92$ for oldest group) compared to all other age groups.
Participants between the ages of 26 and 65 had highly stable attitudes across both time periods \( r_{12} = .65, .48 \), with stability coefficients of .95 and .92, and showed no significant cohort differences. Alwin and Krosnick (1991) extended this, examining the effect of age on the stability of attitudes toward political topics over a 4-year period. The youngest and oldest age groups had the smallest correlation and stability coefficients, but they were not significantly less stable than the other cohorts. Across the four years, and across all cohorts, all attitudes showed a high degree of stability (average \( r = .47 \); average stability coefficient of .91).

This evidence suggests that attitude stability may be best conceptualized as a curve, which peaks in middle adulthood, before slowly descending again. At the same time, however, there is evidence that attitudes can be relatively consistent, if not stable, across the lifespan. For example, Smith (1990) assessed for attitudes toward reading in a group of 84 people across 40 years, beginning assessments when participants were in the first grade (around 6 years old), and ending assessments when they were 26 years out of high school (around 44 years old). Participants’ attitudes toward reading between the first two assessments were weakly, but significantly, correlated \( r = .21 \). Participants’ attitudes toward reading were quite highly correlated between the two adulthood assessments, which were taken 5- and 26-years post high-school completion \( r = .58 \), with all other correlation coefficients ranging between the two. Interestingly, however, Smith (1990) found that his group of participants maintained a moderately positive attitude toward reading throughout the 40 years of assessment. Smith (1990) posits that this lends evidence to an attitude’s degree of stability, in the demonstration of a stable rank order. Specifically, that positive or negative attitudes in childhood are likely to remain positive or negative into adulthood.
So, When Do Attitudes Change?

As a construct, attitudes are generally relatively stable over time, but this is clearly not always the case. Many different attitude constructs are hypothesized to affect attitude stability. For example, attitude strength, affective and cognitive consistency, ambivalence, accessibility, moralization, importance, affective extremity, and confidence have all been shown to affect the degree to which attitudes remain stable over time (Bassili, 1996; Chaiken et al., 1995; Eagly & Chaiken, 1995; Luttrell et al., 2016; Luttrell & Togans, 2020; Petty & Krosnick, 1995; Prislin, 1996; Tesser & Shaffer, 1990; Xu et al., 2020). In particular, an attitude’s degree of stability has been linked to an attitude’s degree of strength: the stronger the attitude, the less likely it is to change. Attitude strength refers to the impactfulness of an attitude on both cognitive processing and behaviour, as well as its ability to resist change. Stronger attitudes are specifically those that exist within extensive cognitive structures (Petty & Krosnick, 1995). These attitude structures can be conceptualized as cognitive hierarchies; strong attitudes exist at the top of the hierarchy, with weaker, though similar, attitudes making up the lower levels. These lower-level attitudes lack strength; a change in a lower-level attitude is unlikely to lead to a change in a higher-level attitude. On the other hand, if a higher-level attitude does change, then the lower-level attitudes that make up its cognitive structure are likely to change as well.

Other non-attitude constructs, such as aging, the environment, societal or cultural changes, personal intention, and trait affect, have also been hypothesized to affect an attitude’s degree of stability (Alwin & Krosnick, 1991; Chatzisarantis et al., 2005; Conner et al., 2002; Krosnick & Alwin, 1989; Schaubroeck et al., 1996). Kiley and Vaisey (2020) and Charlesworth and Banaji (2019) give clear evidence of an individual’s environment affecting their attitudes. As polarizing, controversial topics become neutralized and de-stigmatized at a societal level,
individual attitudes may as well. Attitudes are more likely to change when a person analyzes reasons for or against their initial attitude, learns new information about their initial attitude, or when they merely think further about the attitude object (Bodenhausen & Gawronski, 2013; Erber et al., 1995; Gawronski & Bodenhausen, 2006). Attitudes are also more likely to change as a result of cognitive dissonance (i.e., if the attitude cannot be justified by external factors, then it is more likely to be changed; Bodenhausen & Gawronski, 2013; Gawronski & Bodenhausen, 2006; Festinger, 1964; Tesser & Shaffer, 1990) and self-perception theory (i.e., having an attitude toward something so as to justify an action; Bodenhausen & Gawronski, 2013). When attitudes at a cultural, or societal, level change and contradict one’s own attitude, this in and of itself can facilitate that attitude change.

As discussed, age seems to play an important role in attitude stability (Alwin & Krosnick, 1989). Children and younger adults are less likely to have solidified, strong attitudes (Kiley & Vaisey, 2020), leaving them malleable. Attitudes seem to grow in strength during young adulthood, thus increasing their level of stability with age (Alwin & Krosnick, 1989; Kiley & Vaisey, 2020). After a certain age, attitudes are unlikely to change. Thus, this type of naturally occurring change that might be seen in young people, is uncommon with adults (Kiley & Vaisey, 2020). Attitudes that lack strength, however, may show a similar lack of stability, even in adults. As discussed, Kiley and Vaisey (2020) found that certain political topics, such as attitudes toward abortion in the case of rape, were often changing throughout their 8 years of assessment, and this was true across all ages. This constant changing demonstrates that attitudes such as these may not be strong and may be easily changed through mechanisms such as experience, information, or cognitive dissonance. It would not be surprising, then, that these attitudes are unstable, given that they may be lacking in strength.
Of course, attitudes can also be changed through specific manipulations or interventions (e.g., Furlong & Oei, 2002; Marco et al., 2013; Waller et al., 2018; Xu et al., 2020). Cognitive behavioural therapy (CBT) in particular is a commonly implemented intervention method to change unhealthy, unhelpful attitudes, such as attitudes toward food and body image in eating disorder treatments (e.g., Furlong & Oei, 2002; Marco et al., 2013). Implicit attitudes, specifically, have been shown to change through the process of evaluative conditioning (Gawronski & Bodenhausen, 2006). When attitudes do change, and specifically due to an intervention or manipulation, the attitude change itself is only likely to remain stable if the individual’s future experiences reinforce this newly changed attitude (Gawronski & Bodenhausen, 2006). When this is not the case, the attitude is likely to revert to its original state. Overall, however, when no manipulations or interventions are introduced, most attitudes tend not to change in adulthood (Xu et al., 2020).

The Role of Attitude Stability in the Attitude-Behaviour Relationship

The relationship between attitudes and behaviour is strong (Glasman & Albarracín, 2006; Kraus, 1995), in that an individual’s behaviour is often shaped and influenced by the attitudes they hold. The attitude-behaviour relationship, however, is influenced by an attitude’s degree of stability: the more stable the attitude, the more likely it is to influence behaviour.

In his review of the attitude-behaviour relationship, Kraus (1995) clearly demonstrated that attitudes significantly, and substantially, predict future behaviour; however, he shows that this relationship is largely and significantly moderated by attitude stability. This effect of attitude stability moderating the attitude-behaviour relationship has been replicated. In their meta-analysis examining the attitude-behaviour relationship, Cooke and Sheeran (2004) found that although the relationship between attitudes and behaviour was strong, it was significantly
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moderated by the temporal stability of the attitudes. In fact, they found that, compared to the
other attitude constructs that were included in their review (accessibility, affective-cognitive
consistency, ambivalence, certainty, direct experience, and involvement), temporal stability was
significantly the most effective in moderating the attitude-behaviour relationship. Conner et al.
(2021) found a similar moderating effect of attitude stability on the attitude-behaviour
relationship.

Glasman and Albarracín (2006) also conducted a meta-analysis to examine the role of
attitude stability on the attitude-behaviour relationship. They showed that attitude stability
significantly mediated the relationship between attitude and behaviour. Specifically, that it was
because of an attitude’s degree of stability that it influenced behaviour, with high stability
facilitating that change. While this evidence may be conflicting, it does suggest that attitude
stability may play a key role in the influence of an attitude on behaviour. Specifically, that
attitudes may only influence and predict behaviour if they are stable.

Criminal Attitudes and Criminal Behaviours

The role of attitude stability in the attitude-behaviour relationship has not been explicitly
examined within the literature on violence or crime. There is some evidence that stable
aggressive attitudes are correlated with aggressive behaviour; for example, McConville and
Cornell (2003) found that attitudes toward peer aggression were stable over a 7-month period ($r$
= .66) in middle school children, and that more aggressive attitudes were correlated with
aggressive behaviour. It is unclear, however, whether it was because these attitudes were stable
that they were associated with behaviour. Positive attitudes toward crime have been shown to be
correlated with criminal behaviour, with changes in one being associated with changes in the
other (e.g., Helmus et al., 2012; Olver & Stockdale, 2020); however, the role of attitude stability in this relationship has not been examined.

Criminal attitudes are strongly related to criminal behaviour, and are important predictors of it (e.g., Gendreau et al., 1992, 1996). People with a history of offending are at risk to re-offend in the future. This risk of re-offence, or recidivism, is assessed based on a multitude of factors that have been shown to be related to an increase, or decrease, of this risk. Most often, these risk factors can be categorized as either static or dynamic. Static risk factors are those that are thought of as being constant and unchanging and are therefore not targeted in treatment. These factors can include an individual’s offence history, age at first arrest, and early onset of behavioural problems (Andrews & Bonta, 2010; Farrington, 1995; Gendreau et al., 1996; Loeber, 1982; Moffit, 1993). Dynamic risk factors are those that are thought of as being changeable. These factors can include criminal associates, substance abuse, employment status, and criminal attitudes (Andrews & Bonta, 2010; Helmus et al, 2012; Dowden & Brown, 2002; Gates et al., 1998; Gendreau et al., 1996, 1998; Goggin et al., 1998; Law, 1998; Robinson et al., 1998). These dynamic risk factors are those that are often targeted in treatment aimed at reducing recidivism. Many of these factors are conceptualized as being slowly changing, but viable as treatment targets, in that they are unlikely to change unless they are specifically targeted in treatment (Hanson & Harris, 1998; Quinsey et al., 1995).

Criminal attitudes are associated with recidivism, in that the more pro-criminal the attitude, the more likely is an individual to re-offend (e.g., Brown, 2002; Gendreau et al., 1979; Helmus et al., 2012; Simourd & Van De Ven, 1999; Simourd & Olver, 2002; Walters, 2011). Criminal attitudes are specifically labelled as being dynamic because they have been shown to change following a treatment intervention (e.g., Beggs & Grace, 2011; Barnett et al., 2012;
Wakeling et al., 2011; Olver et al., 2013, 2014; Nunes et al., 2014; Marques et al., 2005), and that this change may lead to a decrease in recidivism risk (e.g., Helmus et al., 2013; Olver & Stockdale, 2020; Wong et al., 2003). Brown (2002) gives evidence that the re-assessment of pro-criminal attitudes actually enhances the predictive accuracy of assessed recidivism risk. Banse et al. (2013) argues that the relationship between criminal attitudes and behaviour is clearer for specific, rather than general, crime. For example, in their meta-analysis, Helmus et al. (2012) demonstrate that attitudes supportive of sexual offending, specifically, are associated with sexual recidivism. In their meta-analysis, however, Helmus et al. (2012) discuss the lack of unity in the constructs that are referred to as “sex offender attitudes,” which makes their relationship with sexual recidivism less clear.

**Temporal Stability of Violent Attitudes**

The exact nature of the relationship between criminal attitudes and subsequent behaviour may not be clear, but what is clear is that they are associated with one another. Through successful treatment programming, both criminal attitudes and recidivism risk may decrease. Without treatment program completion, the odds of a decrease in recidivism risk occurring are comparatively much lower (e.g., Gannon et al., 2019; Hanson et al., 2002, 2009; Lösel & Schmucker, 2005; Olver & Stockdale, 2020; Schmucker & Lösel, 2015).

Studies aimed at changing criminal attitudes through treatment programs have found mixed results. Following treatment programs, criminal attitudes have been shown to both decrease (e.g., Klepfisz et al., 2014; Polaschek et al., 2010) and to have no change (e.g., Woessner & Shwelder, 2014). It is important to note here, however, that criminal attitudes are rarely assessed for in the same way. For example, Woessner and Shwelder (2014) found no reduction in criminal attitudes post treatment intervention. They used the Offense-Supportive
Attitudes and the Negative Attitudes Toward the Law scales (Ortmann, 1987) to assess for criminal attitudes, which each reflect the extent to which individuals externalize the responsibility of their offense and hold negative attitudes toward the legitimacy of the criminal justice system, respectively. Klepfisz et al. (2014) and Polaschek et al. (2010) each found that treatment programs successfully decreased criminal attitudes. To assess for criminal attitudes, Klepfisz et al. (2014) used the Psychological Inventory of Criminal Thinking Styles (PICTS; Walters, 1995), which reflects attitudes supportive of crime, seeing little need to maintain law, and having little respect for law and authority, and Polaschek et al. (2010) used the Criminal Attitudes to Violence Cale (CAVS; Polaschek et al., 2004), which reflects attitudes to criminal violence, aggression, and crime.

It is possible that inconsistencies in the evidence of criminal attitude reduction through treatment are due to inconsistencies in their measurements or in the delivery of the treatment programming. Nonetheless, the evidence demonstrates that criminal attitudes may change given treatment completion. Without the introduction of a treatment intervention, however, criminal attitudes may not change. Walters (1995) demonstrates excellent test-retest reliability of the PICTS (ICC = .84-.86). Similarly, Mills et al. (2002) found excellent test-retest reliability in their Measure of Criminal Attitudes and Associates (ICC = .81; MCAA), and adequate test-retest reliability for each subscale of the MCAA (ICC = .73 for Violence scale; ICC = .74 for Entitlement scale; ICC = .79 for Antisocial Intent scale; ICC = .65 for Associates scale). To the extent that these measures assess criminal attitudes, they give evidence of their stability.

Nunes et al. (2021) show preliminary evidence of the stability, and possibility of change, of evaluative attitudes toward violence in their construction of the Evaluation of Violence Questionnaire (EVQ). The EVQ was developed to measure violent attitudes as evaluations of
violence, specifically. To examine the construct validity of the EVQ, Nunes et al. (2021) conducted a randomized experiment. Participants (men in the community) in the experimental-change condition \( (n = 113) \) first responded to the EVQ, followed by the experimental manipulation, and then responded to the EVQ once more. The manipulation was intended to make evaluative attitudes toward violence more negative; it first required participants to read a persuasive message about the consequences of violence, followed by an evaluative conditioning procedure designed to increase the association between violence and negative stimuli. Participants in the control condition \( (n = 112) \) similarly first responded to the EVQ, followed by the control condition, and then responded to the EVQ once more. Participants in the control condition completed a similar task to the manipulation, but instead read a neutral message, followed by the evaluative conditioning procedure with the negative stimuli changed to neutral stimuli. Participants in the experimental-change condition had significantly lower post-test EVQ scores relative to their pre-test scores \( (M_{\text{change}} = -0.27) \) compared to participants in the control condition \( (M_{\text{change}} = -0.06; \text{medium effect of } d = -0.52) \). To the extent that the EVQ measures evaluative attitudes toward violence, Nunes et al. (2021) demonstrate how they can be changed through experimental manipulation, as well as their potential stability given no manipulation.

**Present Study**

Evaluative attitudes toward violence are related to violent behaviour (Nunes et al., 2022), and through manipulation, they can be changed (Nunes et al., 2021). The temporal stability of evaluative attitudes toward violence, however, is yet to be examined. To examine the degree of stability of evaluative attitudes toward violence, I conducted three studies in which evaluative attitudes toward violence were assessed across daily, weekly, and monthly assessments. No manipulation was introduced between any of the assessments; therefore, I hypothesized that
evaluative attitudes toward violence would behave similarly to other attitudes, and specifically criminal attitudes, in that they would remain relatively stable across all time points.

**Study 1**

In Study 1, I examined the degree of stability of evaluative attitudes toward violence across four days. Participants completed the Evaluation of Violence Questionnaire (EVQ; Nunes et al., 2021) once a day for four consecutive days. To assess for stability, I computed intraclass correlation coefficients (ICCs) and Pearson correlation coefficients of EVQ scores across all assessments. To assess for the amount of attitude change across the assessments, I examined the differences in EVQ scores across time periods.

**Method**

**Participants**

Participants were men registered in either PSYC 1001, 1002, 2001, or 2002 at Carleton University, recruited through Carleton University’s SONA system. A total of 295 students participated in the first survey, and 66 students completed all four assessments. Fifty-two participants completed and met the inclusion criteria (see below) on all four surveys; 139 participants did on the first survey, 88 on the second survey, 62 on the third survey, and 58 on the fourth survey. The 52 participants who completed and met the inclusion criteria across all four assessments had ages ranging from 18 to 25 years old, with a mean age of 19.36 years. The majority of them identified their ethnicity as White (50%, n = 26), with 17.3% identifying as Middle Eastern (n = 9), 7.7% as Black (n = 4), 7.7% as South Asian (n = 4), 5.8% as East/Southeast Asian (n = 3), 5.8% as Latino (n = 3), 1.9% as Middle Eastern and White (n = 1), 1.9% as Black and White (n = 1), and 1.9% as East/Southeast Asian and White (n = 1). The majority of these participants identified being single (69.2%, n = 36), with 25% identifying being
in a romantic relationship \( (n = 13) \) and 5.8% identifying living with a romantic partner \( (n = 3) \). The majority of these participants identified being most sexually attracted to women (96.2%, \( n = 50 \)), with 1.9% identifying being most sexually attracted to men \( (n = 1) \), and 1.9% identifying being equally attracted to both men and women \( (n = 1) \). Demographic statistics for each separate survey day are presented in Table 2.

**Measures**

**Demographic Questionnaire.** Participants were asked demographic questions about their age, gender, ethnicity, current relationship status, and sexual orientation (Appendix A).

**The Evaluation of Violence Questionnaire (EVQ).** The EVQ (Appendix B; Nunes et al., 2021) is a 17-item self-report measure of evaluative attitudes toward violence. Participants rate several violent behaviours (e.g., “You hitting a guy who disrespects you”) on 4-point evaluative response scales (i.e., Negative vs. Positive, Unpleasant vs. Pleasant, Bad vs. Good). Total scores are computed by averaging these ratings, which can range from 1.00 to 4.00, with higher scores reflecting more positive evaluations of violence. Nunes et al. (2021) show evidence of the construct validity and reliability \( (\alpha = .95) \) of EVQ scores. I found excellent internal consistency on the EVQ across all 17 items for all four assessments in Study 1. See Table 3 for descriptive statistics (see Table C1 in Appendix C for descriptive statistics including only those participants who completed and met the inclusion criteria across all four assessments).

**Quality control items.** One item per survey was used to identify participants who were either not paying attention during the survey or who did not understand what the survey was asking. This item instructed participants to select a specific response (Please choose “strongly agree”) and was randomly distributed in each survey.
Table 2

Demographic Statistics for Study 1

<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.60)</td>
<td>(2.95)</td>
<td>(1.81)</td>
<td>(1.68)</td>
<td>(1.75)</td>
</tr>
<tr>
<td>Raceb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>56.7 (65)</td>
<td>48.9 (43)</td>
<td>50.8 (32)</td>
<td>50.0 (29)</td>
<td>50.0 (26)</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>14.4 (20)</td>
<td>15.9 (14)</td>
<td>20.6 (13)</td>
<td>19.0 (11)</td>
<td>17.3 (9)</td>
</tr>
<tr>
<td>Black</td>
<td>12.2 (17)</td>
<td>9.1 (8)</td>
<td>6.3 (4)</td>
<td>6.9 (4)</td>
<td>7.7 (4)</td>
</tr>
<tr>
<td>South Asian</td>
<td>8.6 (12)</td>
<td>10.2 (9)</td>
<td>6.3 (4)</td>
<td>6.9 (4)</td>
<td>7.7 (4)</td>
</tr>
<tr>
<td>East/Southeast Asian</td>
<td>7.2 (10)</td>
<td>5.7 (5)</td>
<td>4.8 (3)</td>
<td>5.2 (3)</td>
<td>5.8 (3)</td>
</tr>
<tr>
<td>Latino</td>
<td>2.9 (4)</td>
<td>3.4 (3)</td>
<td>4.8 (3)</td>
<td>5.2 (3)</td>
<td>5.8 (3)</td>
</tr>
<tr>
<td>Indigenous</td>
<td>2.2 (3)</td>
<td>1.1 (1)</td>
<td>1.6 (1)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>5.0 (7)</td>
<td>5.7 (5)</td>
<td>4.8 (3)</td>
<td>6.9 (4)</td>
<td>5.8 (3)</td>
</tr>
<tr>
<td>Relationship statusb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>71.9 (100)</td>
<td>71.6 (63)</td>
<td>69.8 (44)</td>
<td>70.7 (41)</td>
<td>69.2 (36)</td>
</tr>
<tr>
<td>In a romantic relationship</td>
<td>21.6 (30)</td>
<td>21.6 (19)</td>
<td>23.8 (15)</td>
<td>22.4 (13)</td>
<td>25.0 (13)</td>
</tr>
<tr>
<td>Living with a romantic partner</td>
<td>5.8 (8)</td>
<td>6.8 (6)</td>
<td>6.3 (4)</td>
<td>6.9 (4)</td>
<td>5.8 (3)</td>
</tr>
<tr>
<td>Separated</td>
<td>0.7 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Most sexually attracted tob</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>92.1 (128)</td>
<td>94.3 (83)</td>
<td>93.7 (59)</td>
<td>96.6 (56)</td>
<td>96.2 (50)</td>
</tr>
<tr>
<td>Men</td>
<td>5.8 (8)</td>
<td>2.3 (2)</td>
<td>4.8 (3)</td>
<td>1.7 (1)</td>
<td>1.9 (1)</td>
</tr>
</tbody>
</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 139)</td>
<td>(n = 88)</td>
<td>(n = 63)</td>
<td>(n = 58)</td>
<td>(n = 52)</td>
</tr>
<tr>
<td>Women and men</td>
<td>2.2 (3)</td>
<td>2.3 (2)</td>
<td>1.6 (1)</td>
<td>1.7 (1)</td>
<td>1.9 (1)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>1.1 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. Demographic information for Days 1-4 includes participants who completed and met the inclusion criteria for each assessment; the Total demographic data includes those who completed and met the inclusion criteria across all four assessments, and displays their demographic information given on the Day 4 questionnaire.

\(^{a}M(\text{SD}).\) \(^{b}\%(n)\).

Table 3

Descriptive Statistics of the Evaluation of Violence Questionnaire (EVQ) Across Four Days

<table>
<thead>
<tr>
<th>Assessment</th>
<th>(n)</th>
<th>(M)</th>
<th>(SD)</th>
<th>Min</th>
<th>Max</th>
<th>(\alpha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>139</td>
<td>2.02</td>
<td>0.59</td>
<td>1.00</td>
<td>3.65</td>
<td>.926</td>
</tr>
<tr>
<td>2</td>
<td>88</td>
<td>2.00</td>
<td>0.62</td>
<td>1.00</td>
<td>3.53</td>
<td>.939</td>
</tr>
<tr>
<td>3</td>
<td>63</td>
<td>2.00</td>
<td>0.60</td>
<td>1.06</td>
<td>3.59</td>
<td>.936</td>
</tr>
<tr>
<td>4</td>
<td>58</td>
<td>2.03</td>
<td>0.61</td>
<td>1.06</td>
<td>3.71</td>
<td>.938</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria for each assessment.
**Procedure**

A Certification of Institutional Ethics Clearance was granted by the Carleton University Research Ethics Board-B (CUREB-B) for this study before I began data collection. Students registered in PSYC 1001, 1002, 2001, or 2002 at Carleton University were recruited through Carleton University’s SONA system (Appendix D). Participants were required to sign up for all four assessments upon registering for this study. Once registered, the Qualtrics survey link for the Day 1 assessment became immediately available to participants. Through the Qualtrics link, participants were first presented with the consent form for this study (Appendix E) and were required to provide their consent to participate before proceeding. Participants who provided their consent were then presented with the demographic questionnaire before being asked to respond to the EVQ. The EVQ items were distributed in a counterbalanced order. After completing the EVQ, participants were presented with a debriefing form (Appendix F). Participants were then re-directed back to the SONA system, where they were granted credit for their participation.

The credit that participants received for this study contributed to an increase in their grade in one of the aforementioned courses. Participants received a 1% credit increase only after having completed all four surveys; if participants did not complete all four surveys, they received a 0% credit increase. The Qualtrics link for each survey became available to participants 24 hours after having completed the previous survey and remained available to participants for 24 hours. Participants were able to withdraw from the study at any point during their participation and for up until two weeks after data collection.
Statistical Analysis

To assess for stability across the four days, I computed an ICC with the EVQ scores across the four assessments. To assess for stability between each of the days, I computed bivariate ICCs and Pearson correlation coefficients with the EVQ scores between each pair of assessments. ICCs range from 0 to 1.00, with higher values indicating higher stability. According to Koo and Li (2016), ICCs below .50 indicate poor stability, between .50 and .75 moderate stability, between .75 and .90 good stability, and ICCs above .90 indicate excellent stability. According to Cicchetti (1994), ICCs below .40 indicate poor stability, between .40 and .59 fair stability, between .60 and .74 good stability, and ICCs above .75 indicate excellent stability. While this different criterion exists in the interpretation of ICCs, there is general agreement that ICCs closer to 1.00 indicate high stability, with ICCs closer to 0 indicating low stability.

To assess for the amount of change in EVQ scores across each assessment, I computed the absolute difference in EVQ scores between each assessment. I then examined the distribution of these difference scores to assess for the amount of change that was occurring and its direction. The EVQ is rated on 4-point scales; therefore, the largest possible change across assessments is of $|3.00|$. All data analysis was conducted using SPSS statistical package version 27.

Participant Inclusion Criteria. Participants were excluded from all analyses if they failed to consent to participate or if they withdrew from the study at any point. Participants were additionally excluded from the analyses if they incorrectly responded to the attention check items, had missing data, or if they took an unreasonably short or long amount of time (less than 1 minute or more than 20 minutes) to complete any of the surveys included in each analysis. One-hundred and fifty-five, 91, 66, and 63 participants completed the first, second, third, and fourth assessments, respectively, and 139, 88, 62, and 58 were retained for data analysis, respectively.
TEMPORAL STABILITY OF VIOLENT ATTITUDES

I ran all analyses twice: once including only the 52 participants who completed and met the inclusion criteria across the four assessments, and again including those participants who completed and met the inclusion criteria across each pair of assessments (e.g., ICC between Day 1 and Day 2 includes participants who completed and met the inclusion criteria on both of these assessments). No significant differences were found between my analyses including only those participants who completed all four surveys compared to when I included the participants who completed each pair.

Missing Data. Chi-square and t-test analyses showed no significant differences between participants with and without missing data on the categorical and continuous variables.

Assumptions. The data from participants who each completed the surveys on Days 1, 2, and 4 failed Shapiro-Wilk’s test of normality (all \( p < .05 \)). The histograms showed a general right-skewed trend across these days, although Q-Q plots followed a normal trend for each day. Boxplots showed no outliers, and all skew and kurtosis values were small and non-significant (all \(< |1|\)). Levene’s test indicated homogeneity of variance between each pair of assessments (all \( p > .05 \)).

When I included only those participants who completed all four assessments (\( n = 52 \)), all distributions were normal, as examined by histogram and Q-Q plots and Shapiro-Wilk’s test of normality (all \( p > .05 \)). Boxplots showed no outliers, and all skewness and kurtosis values were small and non-significant (all \(< |1|\)). Levene’s test indicated homogeneity of variance across all four assessments, as well as between each of them (all \( p > .05 \)).

Results

Test-Retest Reliability
I calculated the ICC estimate and its 95% confidence interval (CI) across the four assessments based on a mean-rating \((k = 4)\), absolute-agreement, 2-way mixed-effects model \((n = 52)\). The results indicate a high degree of stability in EVQ scores across the four days: ICC = .977 with a 95% CI of [.965, .985]. I calculated the ICC estimates and their 95% CIs between each pair of assessments based on mean-rating \((k = 2)\), absolute-agreement, 2-way mixed-effects models. All ICCs were greater than .90, indicating a high degree of stability in EVQ scores across each day. See Table 4 for details (see Table G1 in Appendix G for results including only the participants who completed and met the inclusion criteria across all four assessments).

Pearson correlation coefficients showed a similar trend. Bivariate correlations indicated strong positive relationships between each pair \((\text{all } r > .85, \text{ all } p < .001)\). See Table 5 for details (see Table H1 in Appendix H for results including only the participants who completed and met the inclusion criteria across all four assessments).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>Day 1(^a)</th>
<th>Day 2(^b)</th>
<th>Day 3(^c)</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td>.952 [.926, .968]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>.945 [.908, .967]</td>
<td>.977 [.962, .986]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Day 4</td>
<td>.922 [.866, .954]</td>
<td>.978 [.963, .987]</td>
<td>.967 [.943, .981]</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across each pair of assessments; 95% CIs included in square brackets.

\(^a\) \(n_1\) and 2 = 86, \(n_1\) and 3 = 62, \(n_1\) and 4 = 55. \(^b\) \(n_2\) and 3 = 61, \(n_2\) and 4 = 55. \(^c\) \(n_3\) and 4 = 55.
Table 5

*Bivariate Pearson Correlations Between Evaluation of Violence Questionnaire (EVQ) Scores Across Four Days* 

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Day 2</td>
<td>.914 [.871, .943]</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Day 3</td>
<td>.905 [.847, .942]</td>
<td>.955 [.926, .973]</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Day 4</td>
<td>.861 [.771, .917]</td>
<td>.958 [.931, .976]</td>
<td>.936 [.893, .963]</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each pair of assessments; 95% CIs included in square brackets. All $p < .001$.

\[a \ n_1 \ and \ 2 = 86, \ n_1 \ and \ 3 = 62, \ n_1 \ and \ 4 = 55. \ b \ n_2 \ and \ 3 = 61, \ n_2 \ and \ 4 = 55. \ c \ n_3 \ and \ 4 = 55.\]

*Attitude Change*

I calculated difference scores between each assessment by subtracting each of the total EVQ scores from every other total EVQ score (e.g., EVQ Day 1 – EVQ Day 2). The highest change score was of $|1.06|$ across the Day 1 and 4 assessments. Between each assessment, the majority of change scores were less than $|0.21|$. See Table 6 for details (see Table I1 in Appendix I for results including only the participants who completed and met the inclusion criteria across all four assessments). There was no general trend in the direction of the change scores; participants had both increases and decreases in their EVQ scores over time. See Table 7 for details (see Table J1 in Appendix J for results including only those participants who completed and met the inclusion criteria across all four assessments).
Table 6

Changes in Evaluation of Violence (EVQ) Scores Across Four Days

<table>
<thead>
<tr>
<th>Days</th>
<th>n</th>
<th>Md</th>
<th>Change Scoreb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0a&lt;.11.11-.20.21-.30.31-.40.41-.50&gt; 0.50</td>
</tr>
<tr>
<td>1 - 2</td>
<td>86</td>
<td>.18</td>
<td>15.1 (13) 18.6 (16) 31.4 (27) 18.6 (16) 4.6 (4) 4.6 (4) 8.1 (5)</td>
</tr>
<tr>
<td>1 - 3</td>
<td>62</td>
<td>.18</td>
<td>12.9 (8) 22.6 (14) 29.0 (18) 24.2 (15) 3.2 (2) 4.8 (3) 3.2 (2)</td>
</tr>
<tr>
<td>1 - 4</td>
<td>55</td>
<td>.20</td>
<td>14.5 (8) 23.6 (13) 30.9 (17) 10.9 (6) 3.6 (2) 5.4 (3) 9.1 (5)</td>
</tr>
<tr>
<td>2 - 3</td>
<td>61</td>
<td>.14</td>
<td>13.1 (8) 26.2 (16) 39.3 (24) 13.1 (8) 4.9 (3) 3.3 (2) 0</td>
</tr>
<tr>
<td>2 - 4</td>
<td>55</td>
<td>.13</td>
<td>16.4 (9) 20.0 (11) 43.6 (24) 12.7 (7) 3.6 (2) 1.8 (1) 1.8 (1)</td>
</tr>
<tr>
<td>3 - 4</td>
<td>55</td>
<td>.13</td>
<td>21.8 (12) 34.5 (19) 23.6 (13) 14.5 (8) 0 1.8 (1) 3.6 (2)</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across each pair of assessments.

a Percentage (n). b Absolute values of differences presented.

Table 7

Direction of Changes in Evaluation of Violence (EVQ) Scores Across Four Days

<table>
<thead>
<tr>
<th>Days</th>
<th>n</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>86</td>
<td>50.0 (43)</td>
<td>15.1 (13)</td>
<td>34.9 (30)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>62</td>
<td>50.0 (31)</td>
<td>12.9 (8)</td>
<td>37.1 (23)</td>
</tr>
<tr>
<td>1 – 4</td>
<td>55</td>
<td>47.3 (26)</td>
<td>38.2 (21)</td>
<td>14.5 (8)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>61</td>
<td>42.6 (26)</td>
<td>13.1 (8)</td>
<td>44.3 (27)</td>
</tr>
<tr>
<td>2 – 4</td>
<td>55</td>
<td>32.7 (18)</td>
<td>16.4 (9)</td>
<td>50.9 (28)</td>
</tr>
</tbody>
</table>
Table 7 (continued)

<table>
<thead>
<tr>
<th>Days</th>
<th>n</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – 4</td>
<td>55</td>
<td>27.3 (15)</td>
<td>21.8 (12)</td>
<td>50.8 (28)</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each pair of assessments.

*%* Percentage of participants (*n*).

**Discussion**

The results from this study suggest that participants’ EVQ scores were highly stable across the four days of assessment. All ICCs are greater than .90, which indicates a very high degree of stability across all assessments and between each of them (Cicchetti, 1994; Koo & Li, 2016), with only the lower end of the 95% CI between assessments 1 and 4 falling below .90, at .86. The EVQ scores between the second and fourth assessments show the highest degree of stability, with the EVQ scores between the first and fourth assessments showing the lowest degree of stability. The ICC across all four assessments nearly matches that between the second and fourth assessment and has the narrowest 95% CI. The bivariate Pearson correlation coefficients show the same pattern of results as the ICCs, with the largest degree of correlation between the second and fourth assessments, and the smallest between the first and fourth assessments.

These results are corroborated by the changes that occurred in the EVQ scores across the assessments. The largest change score was of |1.06| across the first and fourth assessments; all other differences were less than |1.00|. Across all pairs of assessments, the majority of change...
scores were less than \(|0.21|\), and across the third and fourth assessments, the majority were less than \(|0.10|\). Overall, these results indicate that, while some changes are occurring, participants’ EVQ scores appear to be relatively stable across four days.

**Study 2**

In Study 2, I examined the degree of stability of evaluative attitudes toward violence across four weeks. Participants completed the Evaluation of Violence Questionnaire (EVQ; Nunes et al., 2021) once a week for four consecutive weeks. To assess for stability, I computed intraclass correlation coefficients (ICCs) and Pearson correlation coefficients of EVQ scores across all assessments. To assess for the amount of attitude change across the assessments, I examined the differences in EVQ scores across time periods.

**Method**

**Participants**

Participants were men registered in either PSYC 1001, 1002, 2001, or 2002 at Carleton University, recruited through Carleton University’s online recruitment system, SONA. A total of 210 participants completed the first survey, and 7 completed all four assessments. Six participants completed and met the inclusion criteria across all four surveys; 161 participants did on the first survey, 33 on the second survey, 12 on the third survey, and 6 on the fourth survey. The 6 participants who completed all four surveys had ages ranging from 18 to 20 years old, with a mean age of 18.33 years. The majority of these participants identified their ethnicity as White (50%, \(n = 3\)), with 33.3% identifying as Middle Eastern (\(n = 2\)) and 16.7% as Asian (\(n = 1\)). The majority of these participants identified as being single (83.3%, \(n = 5\)), with 16.7% identifying living with a romantic partner (\(n = 1\)). All of these participants identified being most sexually
attracted to women (100%, \( n = 6 \)). The demographic statistics of the participants who completed each separate survey are displayed in Table 8.

### Table 8

*Demographic Statistics for Study 2*

<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 161 )</td>
<td>( n = 33 )</td>
<td>( n = 12 )</td>
<td>( n = 6 )</td>
</tr>
<tr>
<td>Age(^{a})</td>
<td>19.83 (3.14)</td>
<td>19.76 (3.25)</td>
<td>18.75 (1.82)</td>
<td>18.33 (0.82)</td>
</tr>
<tr>
<td>Race(^{b})</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>50.1 (82)</td>
<td>60.6 (20)</td>
<td>66.7 (8)</td>
<td>50.0 (3)</td>
</tr>
<tr>
<td>Black</td>
<td>18.6 (30)</td>
<td>9.1 (3)</td>
<td>8.3 (1)</td>
<td>0</td>
</tr>
<tr>
<td>Arab</td>
<td>9.3 (15)</td>
<td>9.1 (3)</td>
<td>16.7 (2)</td>
<td>33.3 (2)</td>
</tr>
<tr>
<td>Asian</td>
<td>5.6 (9)</td>
<td>9.1 (3)</td>
<td>8.3 (1)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>Other</td>
<td>16.2 (26)</td>
<td>12.1 (4)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Relationship status(^{b})</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>62.7 (101)</td>
<td>57.6 (19)</td>
<td>75.0 (9)</td>
<td>83.3 (5)</td>
</tr>
<tr>
<td>In a romantic relationship</td>
<td>31.7 (51)</td>
<td>33.3 (11)</td>
<td>16.7 (2)</td>
<td>0</td>
</tr>
<tr>
<td>Living with a romantic partner</td>
<td>5.0 (8)</td>
<td>9.1 (3)</td>
<td>8.3 (1)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>Married</td>
<td>0.6 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Most sexually attracted to(^{b})</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>90.1 (145)</td>
<td>100.0 (33)</td>
<td>100.0 (12)</td>
<td>100.0 (6)</td>
</tr>
<tr>
<td>Men</td>
<td>6.8 (11)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Women and men</td>
<td>1.9 (3)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0.6 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Note. This demographic information comes from those participants who completed and met the inclusion criteria on each assessment. The participants who completed the fourth assessment are the same ones who completed all four assessments; therefore, no total column has been included. $^a M(SD)$. $^b \% (n)$.

Measures

As in Study 1, participants first responded to a demographic questionnaire followed by the EVQ, which had one quality control item randomly distributed throughout each survey. I found excellent internal consistency on the EVQ across all 17 items for all four assessments. See Table 9 for descriptive statistics (see Table C2 in Appendix C for descriptive statistics including only the participants who completed and met the inclusion criteria across all four assessments).

Table 9

Descriptive Statistics of the Evaluation of Violence Questionnaire (EVQ) Across Four Weeks

<table>
<thead>
<tr>
<th>Assessment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>161</td>
<td>1.98</td>
<td>0.66</td>
<td>1.00</td>
<td>4.00</td>
<td>.946</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>1.98</td>
<td>0.68</td>
<td>1.06</td>
<td>3.24</td>
<td>.958</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>1.71</td>
<td>0.56</td>
<td>1.00</td>
<td>2.88</td>
<td>.957</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>1.54</td>
<td>0.66</td>
<td>1.00</td>
<td>2.82</td>
<td>.972</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria for each assessment.
Procedure

The procedure for Study 2 was the same as that for Study 1. See Appendices K through M for the recruitment notice, consent form, and debriefing form for Study 2. For this study, participants received a 0.25% credit for each assessment that they completed, for a total of a 1% credit for completing all four assessments. The Qualtrics link for each survey became available to participants 1 week (168 hours) after having completed the previous survey and remained available to participants for 24 hours. Participants received email notifications when each subsequent survey became available for them to complete and included details of the study (such as credit eligibility) as reminder (Appendix N). Participants were able to withdraw from the study at any point during their participation and for up until two weeks after data collection.

Statistical Analysis

I implemented the same statistical approach to assess for stability in EVQ scores as I did in Study 1. Specifically, to assess for stability across the four weeks, I computed an ICC with the EVQ scores across the four assessments, and to assess for stability between each of the weeks, I computed bivariate ICCs and Pearson correlation coefficients with the EVQ scores between each pair of assessments. Similarly, to assess for the amount of change in EVQ scores across each assessment, I again computed the difference in EVQ scores between each assessment and examined the distributions and directions of these changes. All data analysis was conducted using SPSS statistical package version 27.

Participant Inclusion Criteria. Participants were again excluded from all analyses if they failed to consent to participate or if they withdrew from the study at any point. Participants were additionally excluded from the analyses if they incorrectly responded to the attention check items, had missing data, or if they took an unreasonably short or long amount of time (less than 1
minute or more than 20 minutes) to complete any of the surveys included in each analysis. Two-
hundred and ten, 38, and 15 participants completed the first, second, and third assessments, respectively, and 161, 34, and 12 were retained for data analysis, respectively.

I ran all analyses twice: once including only those participants who completed and met
the inclusion criteria for all four assessments, and again including the participants who
completed and met the inclusion criteria for each pair of assessments. Most results were the
same; however, differences are noted below.

**Missing Data.** Chi-square and t-test analyses revealed no significant differences between
participants with and without missing data on the categorical and continuous variables.

**Assumptions.** The data from participants who each completed the Week 1 and 4
assessments failed Shapiro-Wilk’s test of normality ($p < .001$, $p = .037$). While their histograms
showed general right-skewed distributions, their Q-Q plots followed relatively normal trends.
The boxplot for Week 4 identified one potential outlier; however, this is not necessarily
informative given that there are only 6 data points for Week 4. The flagged data point is not an
extreme EVQ score (2.82), and it appears to be visually consistent with this participants’ other
EVQ scores for Weeks 1, 2, and 3. The residual value of this data point is 2.14, which does not
indicate that it is influential. The Week 4 distribution had moderately high skewness and kurtosis
values (1.95 and 4.18). These values indicate a positive (right) skew, which is corroborated by
the histogram for this data. Skewness and kurtosis are heavily reliant on sample size and given
how small the sample size is for Week 4 ($n = 6$), these values may be over-stating the amount of
skewness and kurtosis present. When I remove the flagged potential outlier from the analysis,
Shapiro-Wilk’s test of normality passes ($p > .05$), and skewness and kurtosis values are
significantly reduced and within normal range (skew below |1| and kurtosis below |3|).
Homogeneity of variance was violated according to Levene’s test between Weeks 1 and 4 ($p = .014$; outcome stays the same when re-run without the outlier) and between Weeks 2 and 3 ($p = .013$). Each pair of assessments had relatively linear relationships, as demonstrated by scatterplots.

When I included only those participants who completed all four assessments ($n = 6$), the distribution of Week 4 again violated Shapiro-Wilk’s test of normality ($p = .037$). This is unsurprising given that the participants who completed all four assessments are the same participants with complete data on the Week 4 assessment. The same participant was again flagged as a potential outlier in the Week 4 assessment. Skewness values were less than $|1|$ for all assessments except for Week 2. Only the data from Week 4 had a kurtosis value above $|3|$. When I remove the flagged outlier from Week 4 from the analyses, the distributions of Weeks 2 and 4 have much smaller, non-significant skewness and kurtosis values. Levene’s test of homogeneity of variance was non-significant, both with and without the Week 4 outlier, across all four assessments, as well as between each individual pair (all $p > .05$). Each pair of assessments had relatively linear relationships, as demonstrated by scatterplots.

To retain as many participants as possible, I have run all analyses both with and without the outlier from Week 4. Most results remained the same; however, differences are noted.

**Results**

**Test-Retest Reliability**

I calculated the ICC estimate and its 95% CI across the four assessments based on a mean-rating ($k = 4$), absolute-agreement, 2-way mixed-effects model ($n = 6$). The results indicate a high degree of stability in EVQ scores across the four weeks: ICC = .976 with a 95% CI of [.912, .996]. I calculated the ICC estimates and their 95% CIs between each pair of assessments.
based on mean-rating ($k = 2$), absolute-agreement, 2-way mixed-effects models. All ICCs are greater than or equal to .90, indicating a high degree of stability in EVQ scores across each week (see Table 10). When I included only those participants who completed and met the inclusion criteria across all four assessments, the 95% CI for the ICC estimate between the Week 1 and 3 assessments crosses zero (see Table G2 in Appendix G).

I additionally calculated all ICC estimates and their 95% CIs with the Week 4 outlier removed (across each week). Without the outlier, the ICC estimate across the four weeks demonstrates a similarly high degree of stability, although to a lower degree than was estimated with the outlier: ICC = .908 with a 95% CI of [.555, .990]. The ICC estimates and their 95% CIs between each pair of assessments are presented in Table 11. With the outlier removed, there is a drastic reduction in the ICCs between each of the assessments, with the 95% CI between the first and fourth assessment crossing zero. When I included only those participants who completed and met the inclusion criteria across the four assessments with this outlier removed, the 95% CIs for the ICC estimates between Weeks 1 and 2 and Weeks 1 and 3 also cross zero (see Table G3 in Appendix G).

The bivariate Pearson correlation coefficients indicate that the total EVQ scores between each week are highly positively correlated (all $r > .80$, all $p < .01$; see Table 12; see Table H2 in Appendix H for results including only those participants who completed and met the inclusion criteria across all four assessments). I again re-ran these analyses without the outlier from Week 4. Without the outlier (see Table 13). While all correlations remain strongly positive, their 95% CIs now span a much wider range. When I computed the bivariate Pearson correlation coefficients including only those participants who completed and met the inclusion criteria
### Table 10

**Bivariate Intraclass Correlations Between Evaluation of Violence (EVQ) Scores Across Four Weeks**

<table>
<thead>
<tr>
<th></th>
<th>Week 1 (^a)</th>
<th>Week 2 (^b)</th>
<th>Week 3 (^c)</th>
<th>Week 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.970 [.938, .985]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.900 [.650, .973]</td>
<td>.946 [.810, .984]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.913 [.374, .988]</td>
<td>.960 [.738, .994]</td>
<td>.982 [.867, .997]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each assessment; 95% CIs included in square brackets.

\(^a\) \(n_1\) and \(n_2 = 31\), \(n_1 = 11\), \(n_1\) and \(n = 6\). \(^b\) \(n_2\) and \(n_3 = 12\), \(n_2\) and \(n = 6\). \(^c\) \(n_3\) and \(n = 6\).

### Table 11

**Bivariate Intraclass Correlations Between Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier**

<table>
<thead>
<tr>
<th></th>
<th>Week 1 (^a)</th>
<th>Week 2 (^b)</th>
<th>Week 3 (^c)</th>
<th>Week 4 (^d)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.969 [.935, .985]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.875 [.534, .986]</td>
<td>.933 [.747, .982]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.651 [-.103, .958]</td>
<td>.880 [.063, .987]</td>
<td>.978 [.387, .998]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each pair of assessments; 95% CIs included in square brackets.

\(^a\) \(n_1\) and \(n_2 = 30\), \(n_1 = 10\), \(n_1\) and \(n = 5\). \(^b\) \(n_2\) and \(n_3 = 11\), \(n_2\) and \(n = 5\). \(^c\) \(n_3\) and \(n = 5\).
Table 12

*Bivariate Pearson Correlations of Evaluation of Violence (EVQ) Scores Across Four Weeks*

<table>
<thead>
<tr>
<th></th>
<th>Week 1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Week 2&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Week 3&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Week 4</th>
<th>Week 5&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.947 [.893, .975]</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.938 [.479, .957]</td>
<td>.889 [.644, .969]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.960 [.674, .996]</td>
<td>.938 [.527, .993]</td>
<td>.990 [.910, .999]</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each pair of assessments; 95% CIs included in brackets. All $p < .01$.  

<sup>a</sup> $n_1$ and $2 = 31$, $n_1$ and $3 = 11$, $n_1$ and $4 = 6$.  
<sup>b</sup> $n_2$ and $3 = 12$, $n_2$ and $4 = 6$.  
<sup>c</sup> $n_3$ and $4 = 6$.  

Table 13

*Bivariate Pearson Correlations of Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier*

<table>
<thead>
<tr>
<th></th>
<th>Week 1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Week 2&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Week 3&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Week 4</th>
<th>Week 5&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.947 [.890, .975]</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.799 [.341, .951]</td>
<td>.864 [.549, .964]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.905 [.112, .994]</td>
<td>.936 [.311, .996]</td>
<td>.986 [.798, .999]</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each pair of assessments; 95% CIs included in square brackets. All $p < .05$.  

<sup>a</sup> $n_1$ and $2 = 30$, $n_1$ and $3 = 10$, $n_1$ and $4 = 5$.  
<sup>b</sup> $n_2$ and $3 = 11$, $n_2$ and $4 = 5$.  
<sup>c</sup> $n_3$ and $4 = 5$.  
<sup>d</sup> $n_4$ and $5 = 5$.  
<sup>e</sup> $n_5$ and $6 = 5$.
across all four assessments with the outlier removed, the 95% CI of the correlation between the Week 1 and 3 assessments now crosses zero (see Tables H3 in Appendix H).

**Attitude Change**

I calculated difference scores between each assessment by subtracting each of the total EVQ scores from every other total EVQ score (e.g., EVQ Week 1 – EVQ Week 2). The highest change score was of |0.59| across the Week 1 and 3 assessments. Between each assessment, the majority of changes scores were less than |0.31|. This was also the case when I removed the outlier from Week 4 from the computation. See Tables 14 and 15 for details (see Tables I2-3 in Appendix I for results including only the participants who completed and met the inclusion criteria across all four assessments, both with and without the outlier). The majority of participants had decreases in their EVQ scores across all time points. This was also the case when the outlier from Week 4 was removed from the computation. See Tables 16 and 17 for details (see Table J2-3 in Appendix J for results including only those participants who completed and met the inclusion criteria across all four assessments).

**Follow-up Analyses**

Only 6 participants completed and met the inclusion criteria across the four assessments in Study 2 (and only 5 when the outlier from Week 4 is removed). Across the first three weeks, however, 11 participants completed and met the inclusion criteria across the three assessments, and no data point is flagged as a potential outlier. Given this slightly larger sample size, I decided to additionally run an ICC across only the first three weeks of assessment. I calculated this ICC estimate and its 95% CI based on a mean-rating ($k = 2$), absolute-agreement, 2-way mixed-effects model ($n = 11$), and I found a high degree of stability in EVQ scores across the three weeks: ICC = .959, with a 95% CI of [.890, .988]. The bivariate ICCs and Pearson
**Table 14**

*Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks*

<table>
<thead>
<tr>
<th>Weeks</th>
<th>n</th>
<th>Md</th>
<th>0&lt;sup&gt;a&lt;/sup&gt;</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt; .50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>31</td>
<td>.18</td>
<td>12.9 (4)</td>
<td>22.6 (7)</td>
<td>19.4 (6)</td>
<td>32.3 (10)</td>
<td>3.2 (1)</td>
<td>9.7 (3)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>11</td>
<td>.29</td>
<td>0</td>
<td>18.2 (2)</td>
<td>27.3 (3)</td>
<td>9.1 (1)</td>
<td>9.1 (1)</td>
<td>27.3 (3)</td>
</tr>
<tr>
<td>1 – 4</td>
<td>6</td>
<td>.31</td>
<td>0</td>
<td>0</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>12</td>
<td>.18</td>
<td>16.7 (2)</td>
<td>33.3 (4)</td>
<td>8.3 (1)</td>
<td>25.0 (3)</td>
<td>8.3 (1)</td>
<td>0</td>
</tr>
<tr>
<td>2 – 4</td>
<td>6</td>
<td>.18</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>0</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>3 – 4</td>
<td>6</td>
<td>.11</td>
<td>16.7 (1)</td>
<td>50.0 (3)</td>
<td>16.7 (1)</td>
<td>0</td>
<td>16.7 (1)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across each pair of assessments.

<sup>a</sup>Percentage (n).  <sup>b</sup>Absolute values of differences presented.

**Table 15**

*Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier*

<table>
<thead>
<tr>
<th>Weeks</th>
<th>n</th>
<th>Md</th>
<th>0&lt;sup&gt;a&lt;/sup&gt;</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt; .50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>30</td>
<td>.18</td>
<td>13.3 (4)</td>
<td>20.0 (6)</td>
<td>20.0 (6)</td>
<td>30.0 (9)</td>
<td>3.3 (1)</td>
<td>10.0 (3)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>10</td>
<td>.26</td>
<td>0</td>
<td>10.0 (1)</td>
<td>30.0 (3)</td>
<td>10.0 (1)</td>
<td>10.0 (1)</td>
<td>30.0 (3)</td>
</tr>
<tr>
<td>1 – 4</td>
<td>5</td>
<td>.32</td>
<td>0</td>
<td>0</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>40.0 (2)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>11</td>
<td>.11</td>
<td>9.1 (1)</td>
<td>36.4 (4)</td>
<td>9.1 (1)</td>
<td>27.3 (3)</td>
<td>9.1 (1)</td>
<td>0</td>
</tr>
<tr>
<td>2 – 4</td>
<td>5</td>
<td>.14</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>40.0 (2)</td>
<td>0</td>
<td>0</td>
<td>20.0 (1)</td>
</tr>
</tbody>
</table>
Table 15 (continued)

<table>
<thead>
<tr>
<th>Weeks</th>
<th>n</th>
<th>Md</th>
<th>Change Score&lt;sub&gt;b&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – 4</td>
<td>5</td>
<td>.06</td>
<td>20.0 (1) 60.0 (3) 20.0 (1) 0 0 0 0</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across each pair of assessments.

<sup>a</sup> Percentage (<i>n</i>).  <sup>b</sup> Absolute values of differences presented.

Table 16

Direction of Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks

<table>
<thead>
<tr>
<th>Days</th>
<th>n</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>31</td>
<td>53.3 (16)</td>
<td>12.9 (4)</td>
<td>35.5 (11)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>11</td>
<td>81.8 (9)</td>
<td>0</td>
<td>18.2 (2)</td>
</tr>
<tr>
<td>1 – 4</td>
<td>6</td>
<td>83.3 (5)</td>
<td>0</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>12</td>
<td>50.0 (6)</td>
<td>16.7 (2)</td>
<td>33.3 (4)</td>
</tr>
<tr>
<td>2 – 4</td>
<td>6</td>
<td>66.7 (4)</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>3 – 4</td>
<td>6</td>
<td>66.7 (4)</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across each pair of assessments.

<sup>a</sup> Percentage of participants (<i>n</i>).
Table 17

Direction of Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier

<table>
<thead>
<tr>
<th>Days</th>
<th>n</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>30</td>
<td>46.7 (14)</td>
<td>13.3 (4)</td>
<td>36.7 (11)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>10</td>
<td>80.0 (8)</td>
<td>0</td>
<td>20.0 (2)</td>
</tr>
<tr>
<td>1 – 4</td>
<td>5</td>
<td>100.0 (5)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 – 3</td>
<td>11</td>
<td>54.5 (6)</td>
<td>9.1 (1)</td>
<td>36.4 (4)</td>
</tr>
<tr>
<td>2 – 4</td>
<td>5</td>
<td>80.0 (4)</td>
<td>20.0 (1)</td>
<td>0</td>
</tr>
<tr>
<td>3 – 4</td>
<td>5</td>
<td>80.0 (4)</td>
<td>20.0 (1)</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across each pair of assessments.

a Percentage of participants (n).

correlation coefficients across the first three weeks only are equivalent to those presented in Tables 10 and 12. All ICCs were again greater than or equal to .90, and all Pearson correlations were again greater than .85.

Discussion

The results from this study indicate that there may have been a high degree of stability in EVQ scores across the four weeks of assessment. Before excluding the outlier that was flagged on the fourth assessment, all ICCs are greater than or equal to .90, indicating a very high degree of stability across all assessments and between each of them (Cicchetti, 1994; Koo & Li, 2016);
however, only the lower end of the 95% CI between the first two weeks was above .90 for all CIs. All other 95% CIs spanned much larger ranges, with the lower end of the 95% CI between the first and last assessments being .375. When I excluded the outlier, this 95% CI crossed zero.

Typically, a negative ICC emerges when the variability within groups is larger than the variability across groups (Gonzalez, 1999). Essentially, this is indicating that the variability among the participants who completed the fourth and/or the first assessments is larger than the variability across the two. Theoretically, negative ICCs do not actually exist, although they can be produced. Negative ICCs are equivalent to an ICC of 0 (Giraudeau, 1996), and are most often the result of very small sample sizes (Cremata, 2015; Terrier, 2015). Because it is the 95% CIs of the ICCs that are nearing, or crossing, zero rather than the ICCs themselves, this does not appear to be indicating that there is a lack of stability, but rather that these results may not be reproduceable given the very wide CIs. This appears to be the case here, given that none of the 95% CIs crossed zero before I removed the outlier from the ICC estimates. Similarly, when I examined the degree of stability across the first three weeks only, these issues disappear. Across the first three assessments, the issue of a potential outlier is gone, and the samples are slightly larger. The 95% CI of the ICC estimate across the three weeks is relatively small in range, and all ICCs are very high, as are the bivariate ICCs. Although their 95% CIs are wider than those of Study 1, they are no longer approaching or crossing zero.

The bivariate Pearson correlation coefficients also indicate that the EVQ scores across the four weeks may be highly correlated, which is to be true both with and without the outlier. When I removed the outlier, the 95% CIs of the correlation estimates again span a much wider range, although all estimates remain significant. These wide CIs are, again, likely due to the fact that they were computed with so few data points.
The changes in EVQ scores across the four weeks are still quite small. Across all pairs of assessments, no change scores are greater than |1.00|, with the largest change score being of |0.59| across Weeks 1 and 3 (this was the case both with and without the outlier). Across all pairs, the majority of changes were less than |0.31|. These changes, again, are quite small, given that the EVQ is rated on 4-point scales. Overall, these results suggest that participants’ EVQ scores may have been relatively stable across the four weeks, but with so few data points there is a lack of confidence in these estimates. The magnitude of the changes in EVQ scores across time points, however, are comparable to those found in Study 1, indicating a relatively small amount of change across the four weeks.

**Study 3**

In Study 3, I examined the degree of stability of evaluative attitudes toward violence across three months. Participants completed the Evaluation of Violence Questionnaire (EVQ; Nunes et al., 2021), this time once a month for three consecutive months. Only 1 participant completed all three assessments; therefore, I assessed for stability across the first two months only using intraclass correlation coefficients (ICCs) and Pearson correlation coefficients. To assess for the amount of attitude change across the two assessments, I examined the differences in EVQ scores across them.

**Method**

**Participants**

Participants were men registered in either PSYC 1001, 1002, 2001, or 2002 at Carleton University, recruited through Carleton University’s online recruitment system, SONA. A total of 22 participants completed the first survey, with only 1 participant completing all three assessments. Nine participants completed the first two assessments, with 8 of them meeting the
inclusion criteria across both assessments. Eighteen participants had completed and met the inclusion criteria on the first survey, 8 on the second, and 1 on the third. The 8 participants who completed the first two assessments had ages ranging from 18 to 21 years old, with a mean age of 19 years. Of these 8 participants, the majority identified their ethnicity as Asian (37.5%, \( n = 3 \)), with the remaining 5 participants identifying as either White (12.5%, \( n = 1 \)), Black (12.5%, \( n = 1 \)), East Indian (12.5%, \( n = 1 \)), Arab (12.5%, \( n = 1 \)), or both East Indian and Arab (12.5%, \( n = 1 \)). The majority of these participants identified as being single (62.5%, \( n = 5 \)), with 37.5% identifying living with a romantic partner (\( n = 3 \)). All of these participants identified being most sexually attracted to women (\( n = 8 \)). The demographic statistics of the participants who completed each the assessments for Months 1 and 2 are presented in Table 18. Given that only 1 participant completed the third assessment, their demographic information will not be presented.

**Measures**

As in Studies 1 and 2, participants first responded to the demographic questionnaire followed by the EVQ, which had one quality control item randomly distributed throughout each survey. I found excellent internal consistency on the EVQ across all 17 items for the first assessment, and acceptable internal consistency for the second assessment (internal consistency cannot be calculated for the third assessment). See Table 19 for descriptive statistics (see Table C3 in Appendix C for descriptive statistics including only the participants who completed and met the inclusion criteria across the first two assessments).
### Table 18

**Demographic Statistics for Study 3**

<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>Month 1</th>
<th>Month 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n = 18</strong></td>
<td><strong>n = 8</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>19.50 (1.86)</td>
<td>19.00 (1.07)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>33.3 (6)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td>Black</td>
<td>11.1 (2)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td>Arab</td>
<td>5.6 (1)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td>Asian</td>
<td>5.6 (1)</td>
<td>37.5 (3)</td>
</tr>
<tr>
<td>East Indian and Arab</td>
<td>5.6 (1)</td>
<td>12.5 (1)</td>
</tr>
<tr>
<td><strong>Relationship status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>72.2 (13)</td>
<td>62.5 (5)</td>
</tr>
<tr>
<td>In a romantic relationship</td>
<td>22.2 (4)</td>
<td>37.5 (3)</td>
</tr>
<tr>
<td>Living with a romantic partner</td>
<td>5.6 (1)</td>
<td>0</td>
</tr>
<tr>
<td>Married</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Most sexually attracted to</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>88.9 (16)</td>
<td>100.0 (8)</td>
</tr>
<tr>
<td>Men</td>
<td>5.6 (1)</td>
<td>0</td>
</tr>
<tr>
<td>Women and men</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* This demographic information comes from those participants who completed and met the inclusion criteria on each assessment. The participants who completed the second assessment are
the same ones who completed and met the inclusion criteria across both; therefore, no total column has been included.

\(^a M(SD). \, ^b \%\(n\).

### Table 19

*Descriptive Statistics of the Evaluation of Violence Questionnaire (EVQ) Across Two Months*

<table>
<thead>
<tr>
<th>Assessment</th>
<th>(n)</th>
<th>(M)</th>
<th>(SD)</th>
<th>Min</th>
<th>Max</th>
<th>(\alpha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18</td>
<td>2.17</td>
<td>0.61</td>
<td>1.24</td>
<td>3.06</td>
<td>.923</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>1.89</td>
<td>0.32</td>
<td>1.41</td>
<td>2.24</td>
<td>.642</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria for each assessment. Descriptive statistics for assessment 3 will not be presented because there is only 1 data point.

### Procedure

The procedure for Study 3 was the same as that for Studies 1 and 3. See Appendices O through Q for the recruitment notice, consent form, and debriefing form for Study 3. Participants received a 0.25% credit for completing each of the first two assessments, and an additional 0.50% credit for completing the third assessments. This totals to a 1% credit increase for completing all three assessments. The Qualtrics link for each subsequent survey became available to participants 1 month (4 weeks, or 672 hours) after having completed the previous survey and remained available to participants for 24 hours. Participants received email.
notifications when each subsequent survey became available for them to complete and included details of the study (such as including credit eligibility) as reminder (see Appendix R). Participants were able to withdraw from the study at any point during their participation and for up until two weeks after data collection.

**Statistical Analysis**

As before, to assess for stability across the assessments, I computed an ICC and a Pearson correlation coefficient with the EVQ scores across the first two assessments. I similarly computed the absolute difference in EVQ scores across the two assessments to examine the distribution and direction of the change across the two months. All data analysis was conducted using SPSS statistical package version 27.

**Participant Inclusion Criteria.** Participants were again excluded from all analyses if they failed to consent to participate or if they withdrew from the study at any point. Participants were additionally excluded from the analyses if they incorrectly responded to the attention check items, had missing data, or if they took an unreasonably short or long amount of time (less than 1 minute or more than 20 minutes) to complete any of the surveys included in each analysis. Twenty-two and nine participants completed the first and second assessments, respectively, and 18 and 8 were retained for data analysis, respectively. The 8 participants who completed and met the inclusion criteria on the second assessment also did on the first. Since only 1 participant completed all three assessments, I could only run analyses across the first two months. Because of this, I only ran each analysis once, given that those participants who completed all assessments are the same participants who completed the first and second assessment.

**Missing Data.** Chi-square and t-test analyses showed no significant differences between participants with and without missing data on the categorical and continuous variables.
**Assumptions.** The assumption of normality was met for both the data on Months 1 and 2 separately, as well as across the two. Shapiro-Wilk’s test of normality was non-significant for each analysis \((p > .05)\), and all histograms and Q-Q plots demonstrated somewhat normal trends. All skewness and kurtosis values were small (values less than \(|1|\) and \(|3|\), respectively). According to Levene’s test, homogeneity of variance was violated across Months 1 and 2 \((p = .04)\) when I included participants who completed and met the inclusion criteria on each of the assessments. When I included only those participants who completed both assessments, homogeneity of variance was met \((p > .05)\). The EVQ scores across Months 1 and 2 showed a somewhat linear relationship according to their scatterplot, although a couple data points did stray from the linear trend; however, the sample size is too small \((n = 8)\) to note whether this is meaningful.

**Results**

**Test-Retest Reliability**

I calculated the ICC estimate and its 95% confidence interval across the first two assessments based on a mean-rating \((k = 2)\), absolute-agreement, 2-way mixed-effects model \((n = 8)\). The results showed a relatively high degree of stability of EVQ scores across the two months: ICC = .777 with a 95% CI of [.007, .954]. Pearson’s correlation coefficient similarly demonstrated a moderately strong positive relationship between the EVQ scores of Months 1 and 2: \(r = .717 (p = .045)\) with a 95% CI of [.025, .944].

**Attitude Change**

I calculated the difference scores by subtracting the EVQ scores of Month 2 from Month 1. The highest change score was of \(|0.59|\), and the majority of change scores were less than \(|0.41|\).
See Table 20 for details. Across the two months, 75% of participants \((n = 6)\) had decreases in their EVQ scores, and 25% \((n = 2)\) had increases.

**Discussion**

As in Study 2, I had quite a small sample size in this study, with only 1 participant who actually completed all assessments, and 8 who completed and met the inclusion criteria across the first two. According to Cicchetti (1994), I observed excellent stability across the two months, but only good stability according to Koo and Li (2016). Still, this suggests that participants’ EVQ scores across the two months were relatively stable. The Pearson correlation coefficient across the two months similarly demonstrates that the EVQ scores between these assessments were strongly positively correlated. The issue, however, is once again in their 95% CIs spanning very large ranges. For both the ICC and Pearson correlation estimates, the lower ends of the 95% CIs come very close to zero, with the upper ends coming very close to one. As discussed in Study 2, the reason for this is likely due to how few data points were available to compute these estimates.

**Table 20**

Changes in Evaluation of Violence (EVQ) Scores Across Two Months

<table>
<thead>
<tr>
<th>Months</th>
<th>(M_d)</th>
<th>0(^a)</th>
<th>&lt; .11</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt; .50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2</td>
<td>.33</td>
<td>0</td>
<td>12.5 (1)</td>
<td>12.5 (1)</td>
<td>25.0 (2)</td>
<td>12.5 (1)</td>
<td>25.0 (2)</td>
<td>12.5 (1)</td>
</tr>
</tbody>
</table>

*Note. Computed using data from participants who completed and met the inclusion criteria across both assessments, \(n = 8\).*

\(^a\)Percentage \((n)\). \(^b\) Absolute values of differences presented.
The changes that occurred in EVQ scores across the two assessments, however, remained quite small. Not only were all of the changes in EVQ scores less than |1.00|, only one was greater than |0.50|. This suggests that, while some changes were occurring, they were relatively small. This indicates that participants’ EVQ scores were quite consistent across the two months. Taken together, it seems as though participants’ EVQ scores may have been quite stable across the two months, but again, the 95% CIs computed with the correlation coefficients span too large a range to be certain.

**General Discussion**

Evaluative attitudes toward violence may be highly stable. This seems to be clear across daily, and even weekly, assessments, but less so across monthly assessments. The intraclass correlation coefficients (ICCs) that I computed across all assessments indicated high degrees of stability, and the Pearson correlation coefficients indicated strong positive correlations of EVQ scores over time. As the time intervals between assessments grew larger across the three studies, there was a general trend of the 95% CIs of the ICC and Pearson correlation coefficient estimates to become wider. While this may be due to the decrease in sample sizes across the studies, it may also indicate that evaluative attitudes toward violence are more stable in the short-term than they are in the long term.

The changes that are occurring across each of the time points, however, remain consistently small. Across all three studies, the largest amount of change in EVQ scores that I found was across Days 1 and 4 (|1.06|), with all other changes remaining below |1.00|. Because the EVQ items are rated on 4-point scales, theoretically, the largest change that could occur between two time points is of |3.00|. This would occur if all items were rated as the most positive or negative on one assessment, and the opposite on another. A change score of |1.00| indicates a
change from one Likert scale response to another. For example, if a participant had a total EVQ score of 1.00 on Day 1 and of 2.00 on Day 4, then they have moved from the lowest possible Likert response score, to the second lowest. If we conceptualize the 4-point Likert response scales as four discrete categories of evaluations of violence, then a change of |1.00| or greater would indicate a change in category. For example, if a participant had an EVQ total score of 1.15 on Day 1 and 2.15 on Day 4, this could then indicate that this individual has changed from an overall “very negative” attitude toward violence, to an overall “negative” attitude toward violence. Using this framework, only one participant across all three studies changed attitude “categories” (between Days 1 and 4, change of 1.06). The majority of changes in EVQ scores, however, were consistently less than |0.41|, with the largest change scores in Studies 2 and 3 being only |0.59|. With this attitude “category” conceptualization, participants appear to simply be moving around their attitude “category,” and rarely change by more than a half step up or down across assessments.

Examining participants’ attitude rank orders, or attitude category placements, over time may be a potentially meaningful examination of attitude stability. This conceptualization has even been used in past research as a stability indicator. For example, Smith (1990) did find relatively correlated reading attitude scores across 40 years ($r = .21$), but he also specifically found that his group of participants scored consistently moderately positively toward reading across the 40 years. His participants’ reading scores did change across the 40 years, but in such a way that they retained their general evaluation of reading over time. With this in mind, the results from my studies do appear to give evidence of the relative stability of evaluative attitudes toward violence, even across four weeks and two months.
While Pearson correlation coefficients, specifically, may not be as valid in terms of assessing for stability compared to the ICC, I included these analyses in my studies to compare them to past research. Pearson correlation coefficients are not only very widely used, but the majority of research on attitude change and stability incorporates them as a measure of stability. With this in mind, the correlation coefficients that I have computed, while spanning large ranges in their CIs, may be indicative of stability when compared to past research. The coefficients that I computed in Studies 2 and 3, across weekly and monthly assessments, are all within the range of the coefficients for these lengths of assessments presented in Table 1. Further, besides the CI of the ICC estimate between the Week 1 and 4 assessments from Study 2 (not including those estimated without the outlier datapoint), all other CIs across the weekly assessments are in the same range of correlation coefficients as those studies presented in Table 1.

More relatedly, the ICC estimates that I have computed are comparable to those found with similar measurements. Mills et al. (2002) report an ICC of .81 for the MCAA, with ICCs ranging from .65 to .79 for its subscales. Similarly, Walters (1995) reports ICCs ranging from .84 to .86 for the PICTS. The ICCs that I have computed for the EVQ are generally similar, if not larger, to these. Nunes et al. (2022) give evidence that the MCAA and the EVQ may not be assessing the same construct, but at the same time, these two measures are highly correlated. If the EVQ is assessing a similar construct to that of the MCAA, then the constructs that they are assessing may show a similar degree of stability. To the extent that this is true, this may indicate that the ICCs that I have computed, while lacking power, are not an inaccurate estimate of the degree of stability of the construct.
Limitations

There are several noteworthy limitations across all three of my studies. In each of them, I had much smaller sample sizes than anticipated. Bujang and Baharum (2017) have specified a sample of at least 35 participants for 80% power, and 49 participants for 90% power when calculating ICCs with four assessments. With three assessments, a minimum of 60 participants for 80% power and 83 participants for 90% power are necessary, and with two assessments, a minimum of 152 participants for 80% power and 210 for 90% power are necessary (Bujang & Baharum, 2017). Similarly, a sample size of about 85 participants is recommended for 80% power for Pearson correlation coefficients (Statistics Solutions, N.D.). Given this specification, I may have had enough participants for an adequately powered ICC across the four days in my first study \((n_1 = 52)\), but this is not true for my second and third studies \((n_2 = 6, n_3 = 8)\).

Additionally, while the Pearson correlation coefficients that I computed were generally consistent with the ICCs, these results were also not highly powered across my assessments, with the one exception between the Day 1 and 2 assessments from Study 1 \((n = 86)\).

The main reason for these small samples sizes was in my inability to retain participants across each of the assessments. I lost more than half of my samples from the first to the last assessments across all three of my studies \((n_{1,2,3} = 139, 161, 18\) on the first assessment; \(n_{1,2,3} = 58, 8, \) and \(8[1]\) on the last assessment). If I had had high participant retention, all but my third study would have had an adequate number of participants to have highly powered ICCs. One reason for my lack of participant retention may be because of the pool of individuals from which I recruited my participants: undergraduate men. Men are generally more likely to drop-out of research studies than women (e.g., Holt et al., 2016; Mein et al., 2012; Radler & Ryff, 2010; Teague et al., 2018), and there is some evidence that older adults are more likely to complete
research studies than younger adults (e.g., Holt et al., 2016; Mein et al., 2012). The
generalizability of my results is also of concern given my sample. All of my participants were
undergraduate men, the majority of which identified their sexual orientation as heterosexual and
their ethnicity as White. It is unclear whether a similar pattern of results would be found in other
populations.

The use of undergraduate students as convenience samples in research has long been
criticized. Sears (1986) argues that undergraduate students have less crystallized attitudes, less-
formulated senses of self, stronger cognitive skills, stronger tendencies to comply with authority,
and more unstable peer group relationships. For these potential differences, Sears (1986) draws
into question the external validity of results used with these samples. Similarly, Peterson and
Merunka (2014) show that using convenience samples, and specifically student samples, leads to
inconsistent results, thus decreasing their validity. If undergraduate students are presumed to be
relatively prosocial in nature, then they should similarly have extremely low EVQ scores. If this
is the case, then the changes that I am observing would be restricted to mostly increases, rather
than decreases over time. This, however, does not seem to be the case. The mean total EVQ
scores from my three studies are similar to those previously reported. In their validation of the
EVQ, Nunes et al. (2021) had pre- and post-manipulation mean total EVQ scores that ranged
from 1.75 to 2.06 in a community sample (ns ranging from 111 to 124). Similarly, Nunes et al.
(2022) found a mean total EVQ score of 1.89 in a sample of community men (n = 342). In the
current study, mean total EVQ scores ranged from 1.54 to 2.17, with a grand mean of 1.93.
Further, I found both increases and decreases in participant EVQ scores across assessments. In
fact, across most time points, EVQ total scores tended to decrease, rather than increase, over
time.
Given the similarity in mean total EVQ scores between my undergraduate samples and those found with community samples, this reduces the threat of reproducibility from a convenience sample, as shown by Peterson and Merunka (2014). Further, because the changes in EVQ scores that I observed were not restricted to only increases in scores, but actually showed a general tendency to decrease, there appears to be no threat of floor effects present. If undergraduate students have less crystallized attitudes comparatively to older adults, as proposed by Sears (1986), then this should indicate that undergraduate students may have less stable attitudes compared with older adults. Given the high degree of stability that I have demonstrated in these preliminary studies, this may indicate that a similar, if not a higher, degree of stability should be found in older populations. In fact, Alwin and Krosnick (1989) specifically demonstrated that young adults may exhibit lower degrees of attitude stability compared to older adults. Across my three studies, the mean ages of my participants ranged from 18.33 to 19.83 years. While this may threaten the validity of my results, I have, again, shown that, even in this young population, evaluative attitudes toward violence appear to be at least highly stable across four days, and even potentially across four weeks and two months.

Across all time points in each of my three studies, I assessed for evaluative attitudes toward violence with the EVQ. In using the same measure to assess for the same construct over time, this allows for an informative and meaningful comparison of scores across assessments. Similarly, this allows the ICCs to be computed using their raw scores, rather than requiring standardization prior to computation. On the other hand, I assessed for evaluative attitudes toward violence with the same group of participants over time, so with each assessment these participants were continuously re-exposed to the same measurement. To the extent that they remembered the EVQ items across assessments, participants may have been inclined to respond
similarly in subsequent assessments. This may be particularly true in my first study, for which assessments were taken four days in a row. If this is true, then any stability in scores may be explained by this form of responding, rather than actual attitude stability. This may additionally explain why I found smaller ICCs as the time intervals between assessments increased; however, given the short amount of time it should take to complete the EVQ (approximately 5 minutes), and the non-specific nature of the scenarios (e.g., a “guy” does something in a non-descriptive scenario), participants may not have retained specifics of the EVQ items to the point that it would influence their future responding. Further, the EVQ items are presented in a randomized order for each of the assessments. This may have made it more difficult for participants to respond based on memory alone, given that they were likely seeing the items presented in a different order for each of the surveys they responded to.

Another potential explanation for the stability of EVQ scores, if not of actual attitude stability, could be that the wording of the EVQ items do not facilitate stability, or change. Or, rather, that it could restrict them. The EVQ items consist of several scenarios for which respondents’ rate how positive compared to negative, bad compared to good, or unpleasant compared to pleasant they think the scenario is. For example, participants would rate whether they think very negatively, negatively, positively, or very positively about a situation in which they threaten to “physically hurt a guy who disrespects someone you care about”. All of the EVQ items follow a similar layout: you rate how negatively or positively you feel about or think of you reacting in some aggressive manner to a situation in which you may feel disrespected or threatened. These scenarios involve mostly non-specific individuals (e.g., refers only to “a guy”), and occur in non-specific situations (i.e., the scene is not laid out). In total, the EVQ should only take about 5 minutes to complete. Given the nature of these scenarios, it may be unlikely that
participants would experience an emotional response to them, or that participants would reflect upon them post-completion, especially given that they are only exposed to these scenarios for approximately 5 minutes. With this in mind, it seems unlikely that the wording of the EVQ would encourage a form of internal reflection over time that would cause an individual’s evaluative attitudes toward violence to become more or less severe. Nunes et al. (2021) may even lend evidence to this, given that only participants in their manipulation condition aimed at reducing evaluative attitudes toward violence had reductions in EVQ scores post-manipulation, but the control group had no change. This also demonstrates how the EVQ can detect changes in evaluative attitudes toward violence, and does not appear to restrict actual change, or the measurement of it.

Relatedly, it is unclear whether a test-retest design can accurately detect for cognitive stability. While the stability that I did find across my studies certainly demonstrates the test-retest reliability of the EVQ, it is less clear whether this additionally reflects true attitude stability. In its calculation, the ICC accounts for both inter- and intra-subject variability (i.e., attributable differences between participants, and attributable differences across the same participants), as well as residual variability (i.e., the random variability that is associated with measurement errors). This means that the ICC should reflect the stability of participants’ scores in terms of both stability of the construct in question, as well as the measure being used to assess it. Unlike the ICC, the Pearson correlation coefficient is calculated without taking into account intra- and inter-subject variability. Theoretically, if the scores across time points differ systematically from one another, then the calculated correlation between time points may be perfect, but the agreement of scores will not be (Correa-Rojas, 2021). The opposite of this could also be true – if participants’ scores do not change from one point to another, but overall follow
TEMPORAL STABILITY OF VIOLENT ATTITUDES

no clear trend, then the calculated correlation could be low even though agreement may be high. Given that the ICC is calculated by accounting for variability attributed to the participants, measurement items, and residuals, the estimate gives a more accurate and less biased estimate of actual stability compared to other correlation coefficients, such as Pearson’s (Correa-Rojas, 2021). All this to say, the ICCs that I have computed should be reflecting not only the test-retest reliability of the EVQ, but also the actual temporal stability of evaluative attitudes toward violence, to the extent that they are being assessed by the EVQ.

A similar limitation across my three studies was in my inability to examine attitude stability using Structural Equation Modelling (SEM). SEM is a more rigorous approach to assess for stability in a construct; however, many researchers specify a minimum sample size of 100 or 150 participants to conduct this type of analysis (e.g., Anderson & Gerbing, 1988; Ding et al., 1995; Tabachnick & Fidell, 2001; Tinsley & Tinsley, 1987), with other researchers specifying at least 200 participants (e.g., Boomsma & Hoogland, 2001; Hoogland & Boomsma 1998; Kline, 2005). Given that I had such small sample sizes across all assessments in my studies, it was not possible for me to incorporate SEM in my analyses.

Lastly, in all three of my studies, I focused specifically on non-sexual violence committed by and against men. The scenarios presented in the EVQ are perpetrated exclusively by men, and it was validated to be used with men. Additionally, the EVQ mostly reflects reactive violence, specifically by asking participants to choose how negatively vs. positively they feel about reacting in some aggressive manner to a situation in which they may feel threatened or disrespected. This narrow focus, however, is quite informative. Most non-sexual violence is committed by and against men, and is mostly reactive in nature (e.g., Stanford et al., 2003). Further, with such a narrow focus, this may have allowed me to have homogeneity of my
samples across studies, which reduced potential error in my analyses. This is not to say that it is unimportant to determine the degree of stability of evaluative attitudes with other populations, but rather that this preliminary study offers foundational evidence to build upon. In fact, it is likely necessary to examine the degree of stability of evaluative attitudes separately for different subgroups. For example, it has consistently been shown that gender differences exist in terms of which risk factors predict recidivism (e.g., Blanchette, 2002; Brown & Motiuk, 2008; Heilbrun et al., 2008; Langan & Pelissier, 2001; Van Voorhis et al., 2010). Further, there is evidence that men and women differ in their cognitive structures (e.g., Chess & Thomas, 1984; Bennet et al., 2005; Prior et al., 1993; Rutter, 1985; Taylor, 1985), and, more specifically, that they may differ in their strength and prevalence of criminal attitudes (Blanchette, 2002). Criminal attitudes are, nonetheless, important predictors for recidivism in women as well (Hollin & Palmer, 2010), but these gender differences emphasize the need to construct measures with different subgroups in mind, and to examine these types of constructs separately for them.

**Future Directions**

Future research should aim to replicate and extend my results. Specifically, future studies should aim to extend my results by examining the temporal stability of evaluative attitudes toward violence in diverse populations, including with women, older adults, non-student populations, and those who have committed violent offenses. Longer follow-up time periods between assessments should also be implemented to examine the more long-term stability of evaluative attitudes toward violence. Specifically, the degree of stability of evaluative attitudes toward violence should be examined across yearly assessments to more clearly understand for how long they remain stable, and by how much they change across longer time periods. It would also be informative to include multiple measures of attitudes toward violence, to more accurately
determine stability of the construct, rather than responses to a measure. Similarly, it would be informative to include a measure of violent behaviour, or propensity of aggression, at each assessment. When changes in evaluative attitudes toward violence do occur, it would be informative to see if it is associated with a similar change in violent behaviour.

The temporal stability of attitudes has been hypothesized and shown to be affected by other dimensions of attitudes, including attitude strength, consistency, ambivalence, accessibility, moralization, importance, affective extremity, and confidence (Bassili, 1996; Chaiken et al., 1995; Eagly & Chaiken, 1995; Luttrell & Togans, 2020; Petty & Krosnick, 1995; Prislin, 1996; Tesser & Shaffer, 1990; Xu et al., 2020). While Glasman and Albarracín (2006) demonstrate that other attitude constructs influence the attitude-behaviour relationship only because they promote attitude stability, and Cooke and Sheeran (2004) demonstrate that attitude stability is more effective than other attitude constructs in explaining the attitude-behaviour relationship, this could be an important area to examine in the future. Specifically, to examine whether the degree of stability of evaluative attitudes toward violence appears to be affected or influenced by these other dimensions of attitudes. Similarly, to examine whether the degree of stability of evaluative attitudes toward violence interacts with other dimensions of attitudes to better explain the attitude-behaviour relationship.

Attitudes can be classified as being explicit or implicit, with explicit attitudes thought as being deliberate evaluations, and implicit attitudes as automatic ones (see Gawronski & Bodenhausen, 2006). Explicit and implicit attitudes may behave similarly in their temporal stability but may also react differently to treatment aimed at changing them. For example, Polaschek et al. (2010) were successful in changing explicit criminal attitudes following treatment, but implicit criminal attitudes remained the same. Conversely, Jeon et al. (2019)
significantly reduced implicit criminal attitudes post an evaluative conditioning manipulation, whereas those in the control condition had no change in their implicit criminal attitudes. In examining implicit and explicit evaluations of sexual aggression, Hermann and Nunes (2018) found that, when no manipulation was administered, both implicit and explicit evaluations of sexual aggression remained stable over a four-month interval. Similarly, Banse et al. (2015) found stable implicit aggressive attitudes over 1 week ($r = 0.58, p < .001$). It may simply be that, temporally, implicit and explicit attitudes behave similarly, in that they may exhibit a high degree of stability; however, different approaches aimed at changing them may be necessary.

Implicit attitudes are important in understanding and predicting violent behaviour (e.g., Eckhardt & Crane, 2014; Eckhardt et al., 2012; Hermann & Nunes, 2018; Maimone, 2021), and have been shown to explain and predict violent behaviour differently than explicit attitudes (e.g., Eckhardt & Crane, 2014; Eckhardt et al., 2012; Maimone, 2014, 2021). Future research should seek to examine the temporal stability of implicit attitudes toward violence, specifically, and should explore the best approaches to changing them.

Evaluative attitudes toward violence are related to violent behaviour (Nunes et al., 2022), but the role of temporal stability in this relationship has not been examined. There is evidence to suggest that the temporal stability of an attitude may have a more important role in the attitude’s influence on behaviour, beyond just being associated with it. The influence of an attitude on behaviour has been shown to both be dependent on and explained by the temporal stability of the attitude (e.g., Cooke & Sheeran, 2004; Glasman & Albarracin, 2006). Future research should seek to directly examine the role of temporal stability in the relationship between evaluative attitudes toward violence and violent behaviour. Specifically, future research should explore the
potential mediation or moderation effect of the temporal stability on the attitude-behaviour relationship.

Finally, future research should seek to examine the temporal stability of changed evaluative attitudes toward violence. There is evidence that criminal attitudes can be changed through treatment implementation (e.g., Kleipfisz et al., 2014; Polaschek et al., 2010), and Nunes et al. (2021) demonstrate that evaluative attitudes toward violence, specifically, can be changed through experimental manipulation. The long-term stability of this attitude change, however, has not been examined. Future research should examine the temporal stability of changed evaluative attitudes toward violence to better understand for how long these attitudes will remain changed.

**Practical and Theoretical Implications**

Evaluative attitudes toward violence seem to exhibit a high degree of stability, given no intervention. This suggests that, without treatment or manipulation, they are unlikely to change. Notwithstanding the need for more research in this area, the results of the current study have important practical implications. Namely, because stronger evaluative attitudes toward violence are associated with more violent behaviour (Nunes et al., 2022), it is likely that they are important treatment targets for programs aimed at reducing violent recidivism risk. The current research on the relationship between evaluative attitudes toward violence and violent behaviour has only been examined with non-clinical samples; however, given that criminal attitudes may encapsulate evaluative attitudes toward violence in their assessment, they are likely also important risk factors for violent recidivism. With this in mind, future research will be needed to determine best practices in reducing evaluative attitudes toward violence, and to explore whether a reduction in evaluative attitudes toward violence leads to a reduction of violent recidivism.
Attitudes, however, are not the sole, or necessarily the primary, cause of behaviours. Similar cognitions, such as beliefs, implications, and values, also shape behaviour (e.g., Homer & Kahle, 1988; Marsh & Wallace, 2005), and external factors, specifically an individual’s environment, can have a large influence on behaviour (e.g., Gawronski & Bodenhausen, 2006). Because all these factors, including attitudes, can and may work together to influence behaviour, treatment that targets violent attitudes, only, may not have a lasting impact on risk reduction. Specific environmental factors, such as one’s peer-group, have been shown to largely influence an individual’s propensity to act violently (e.g., Mills et al., 2002) – and this may also help to predict whether changes made in treatment will last. As discussed by Gawronski and Bodenhausen (2006), an attitude will only remain changed to the extent that an individual’s environment reinforces that newly changed attitude. This emphasizes the need for treatment programs to not only target multiple factors in their efforts to reduce violent behaviour, but it also suggests that treatment programming should continue post-release to reinforce pro-sociality in different environments.

Conclusion

Evaluative attitudes toward violence may be highly temporally stable. The results of the current study give evidence of their high degree stability across four days, and their potential high degree of stability across four weeks and two months. The changes in evaluative attitudes toward violence that I observed across the assessments appear to be relatively small, and not meaningful, and this was true across daily, weekly, and monthly assessments. The results of the current study indicate that evaluative attitudes toward violence are more trait-like, rather than state-like, in nature; however, future research is needed to better understand the degree of stability of evaluative attitudes toward violence in the long-term.
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Appendices

Appendix A

Demographic Questions

How old are you? (years)

What is your biological sex? (Male, female, other)

What is your ethnicity? (White, Black, Indigenous, Asian, East Indian, Hispanic, Arab, Other [please specify])

What is your current relationship status? (Single, In a romantic relationship, Living with a romantic partner, Married, Separated/divorced/widowed)

Who are you most sexually attracted to? (Women, Men, Both women and men equally, other)
# Appendix B

**Evaluation of Violence Questionnaire (EVQ)**

Items will be presented in a randomized order.

**RESPONSE SCALES**

Negative vs. Positive: Very negative, A bit negative, A bit positive, Very positive  
Unpleasant vs. Pleasant: Very unpleasant, A bit unpleasant, A bit pleasant, Very pleasant  
Bad vs. Good: Very bad, A bit bad, A bit good, Very good

**INSTRUCTIONS**

Please rate how you think or feel about each item. For example, how good or bad would punching someone be?

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Response scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>You hitting (for example, punching or kicking) a guy who hurts someone you care about.</td>
<td>negative vs. positive</td>
</tr>
<tr>
<td>2</td>
<td>You hitting (for example, punching or kicking) a guy who steals from you.</td>
<td>negative vs. positive</td>
</tr>
<tr>
<td>3</td>
<td>You hitting (for example, punching or kicking) a guy who runs a red light and almost hits you with his car.</td>
<td>unpleasant vs. pleasant</td>
</tr>
<tr>
<td>4</td>
<td>You hitting (for example, punching or kicking) a guy who makes you look stupid.</td>
<td>bad vs. good</td>
</tr>
<tr>
<td>5</td>
<td>You hitting (for example, punching or kicking) a guy who tries to make you look weak.</td>
<td>unpleasant vs. pleasant</td>
</tr>
<tr>
<td>6</td>
<td>You hitting (for example, punching or kicking) a guy you hate.</td>
<td>bad vs. good</td>
</tr>
<tr>
<td>7</td>
<td>You threatening to physically hurt a guy who tries to hurt you.</td>
<td>bad vs. good</td>
</tr>
<tr>
<td>8</td>
<td>You threatening to physically hurt a guy who disrespects someone you care about.</td>
<td>negative vs. positive</td>
</tr>
<tr>
<td>9</td>
<td>You threatening to physically hurt a guy who disrespects you.</td>
<td>unpleasant vs. pleasant</td>
</tr>
<tr>
<td>10</td>
<td>You threatening to physically hurt a guy who owes you money.</td>
<td>bad vs. good</td>
</tr>
<tr>
<td>11</td>
<td>You threatening to physically hurt a guy who keeps mouthing off.</td>
<td>bad vs. good</td>
</tr>
<tr>
<td>12</td>
<td>You threatening to physically hurt a guy who says bad stuff about you behind your back.</td>
<td>negative vs. positive</td>
</tr>
<tr>
<td>13</td>
<td>You threatening to physically hurt a guy who makes you mad.</td>
<td>unpleasant vs. pleasant</td>
</tr>
<tr>
<td>14</td>
<td>You threatening to physically hurt a guy who acts tough.</td>
<td>negative vs. positive</td>
</tr>
<tr>
<td>15</td>
<td>You using a weapon (for example, a baseball bat, knife, or gun) on a guy who has sex with your girlfriend/wife or boyfriend/husband.</td>
<td>unpleasant vs. pleasant</td>
</tr>
<tr>
<td>16</td>
<td>You using a weapon (for example, a baseball bat, knife, or gun) on a guy who wrecks your stuff on purpose.</td>
<td>negative vs. positive</td>
</tr>
<tr>
<td>17</td>
<td>You using a weapon (for example, a baseball bat, knife, or gun) on a guy when you’re scared.</td>
<td>bad vs. good</td>
</tr>
</tbody>
</table>
Appendix C

Extra Tables: Descriptive Statistics of the EVQ

Table C1

Descriptive Statistics of the Evaluation of Violence Questionnaire (EVQ) Across Four Days

<table>
<thead>
<tr>
<th>Assessment</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.03</td>
<td>0.51</td>
<td>1.06</td>
<td>3.65</td>
<td>.898</td>
</tr>
<tr>
<td>2</td>
<td>1.98</td>
<td>0.57</td>
<td>1.06</td>
<td>3.53</td>
<td>.924</td>
</tr>
<tr>
<td>3</td>
<td>1.96</td>
<td>0.57</td>
<td>1.06</td>
<td>3.47</td>
<td>.930</td>
</tr>
<tr>
<td>4</td>
<td>2.00</td>
<td>0.59</td>
<td>1.06</td>
<td>3.53</td>
<td>.934</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across all assessments, n = 52.

Table C2

Descriptive Statistics of the Evaluation of Violence Questionnaire (EVQ) Across Four Weeks

<table>
<thead>
<tr>
<th>Assessment</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.75</td>
<td>0.44</td>
<td>1.35</td>
<td>2.53</td>
<td>.871</td>
</tr>
<tr>
<td>2</td>
<td>1.60</td>
<td>0.53</td>
<td>1.12</td>
<td>2.47</td>
<td>.951</td>
</tr>
<tr>
<td>3</td>
<td>1.53</td>
<td>0.51</td>
<td>1.06</td>
<td>2.47</td>
<td>.955</td>
</tr>
<tr>
<td>4</td>
<td>1.54</td>
<td>0.66</td>
<td>1.00</td>
<td>2.83</td>
<td>.972</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across all assessments, n = 6.
Table C3

Descriptive Statistics of the Evaluation of Violence Questionnaire (EVQ) Across Two Months

<table>
<thead>
<tr>
<th>Assessment</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.03</td>
<td>0.52</td>
<td>1.41</td>
<td>2.76</td>
<td>.876</td>
</tr>
<tr>
<td>2</td>
<td>1.89</td>
<td>0.32</td>
<td>1.41</td>
<td>2.24</td>
<td>.642</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across all assessments, n = 8. Descriptive statistics for assessment 3 are not presented because there is only one data point.
Appendix D

SONA Recruitment Notice – Study 1

Study Title: Temporal Stability of Attitudes Towards Violence: Part I

Description: For this study, male participants are asked to complete one 5-minute online survey per day for four days in a row. The purpose of the study is to see how much attitudes toward violence change from one day to the next.

Eligibility Requirements: Male undergraduate students who understand written English. (Note that female students will not be permitted to complete this study).

Risks: The questionnaire contains brief descriptions of typical conflicts and violent behaviours, which may be distressing for some people to read. If descriptions of violence are distressing to you, we do not recommend participating in this study.

Duration and Locale: One 5-minute online survey per day for four days in a row.

Compensation: Students will be asked to complete the questionnaire once a day for four consecutive days in a row. Students will receive course credit in eligible courses (PSYC 1001, 1002, 2001, 2002) only if they complete all four assessments. If students choose to withdraw from this study before completing the fourth assessment, they will not receive course credit.

Researchers: This study is being done by Julia Fraser (Masters student, Department of Psychology, Carleton University) and Samantha Chan (Honours thesis student, Department of Psychology, Carleton University) for their theses, under supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University)

Emails: juliafraser@cmail.carleton.ca, samanthaechan@cmail.carleton.ca,

This research has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance #114926).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (via email at ethics@carleton.ca).
Appendix E

Research Consent Text for Survey – Study 1

Name and Contact Information of Researchers:

Samantha Chan, Carleton University, Honours thesis student of Psychology
Email: samanthaechan@cmail.carleton.ca
Julia Fraser, Carleton University, Masters student of Psychology
Email: juliafraser@cmail.carleton.ca
Supervisor: Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, kevin.nunes@carleton.ca)

Project Title

Temporal Stability of Attitudes Towards Violence: Part I

Carleton University Project Clearance

Clearance #: 114926 Date of Clearance: December 17, 2020

Invitation

This survey is being conducted by Julia Fraser and Samantha Chan of Carleton University department of Psychology (juliafraser@cmail.carleton.ca, samanthaechan@cmail.carleton.ca) for their theses, under the supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, kevin.nunes@carleton.ca)

Objectives and Summary:

The aim of this study is to learn how much attitudes toward violence change from one day to the next. Participation will take approximately 5 minutes each day for four days in a row. Your participation in this survey is voluntary, and you may choose not to take part, or not to answer any of the questions. If you decide to withdraw after you submit the survey, we will remove your responses from survey data if you notify the researcher within 2 weeks of data collection.

Risks and Benefits:

The questionnaire contains brief descriptions of typical conflicts and violent behaviours, which may be distressing for some people to read. If you do feel distress from answering any of these questions, we invite you to contact Carleton University Health and Counseling Services at: 613-520-6674, or the Distress Centre of Ottawa and Region at 613-238-3311 (http://www.dcottawa.on.ca).

Withdrawal:

Your participation in this study is voluntary and should you wish to withdraw you may do so at any point during or between the four assessments. If you decide to withdraw after you submit one or more of the surveys, please email one of the researchers within 2 weeks and we will delete your data.
Compensation:
Should you choose to participate in our survey you will receive course credit in the eligible course. Students will only receive course credit if they complete all four assessments. We are doing this because we need people to do all four assessments for the results to be informative. Students who complete all four assessments (over all four days) will receive credit in the amount of a 1% increase or bonus in their course. Participants can withdraw their data from our study for up to two weeks after data collection. Participants who withdraw their data after completing the four assessments will retain their course credit.

Confidentiality and Data Storage:
We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. We do need your name and student ID to be able to connect your survey responses across the four sessions and to give you course credit. But once that is done, we will delete your name and student ID from our datasets, and we will no longer be able to tell who said what. Research records may be accessed by the Carleton University Research Ethics Board to ensure continuing ethics compliance.

Your data will be stored and protected by Qualtrics on Toronto-based servers, but may be disclosed via a court order or data breach. All data will be kept confidential, unless release is required by law (e.g., child abuse, harm to self or others). The results of this study may be presented or published, but we would never mention your name or student identification number. All research data will be encrypted (or password-protected).

REB Review and Contact Information:
This project was reviewed and cleared by the Carleton University Research Ethics Board. If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board by email at ethics@carleton.ca.

I voluntarily agree to participate in this study.
☐ Yes
☐ No
Appendix F

Debriefing Form – Study 1

Name and Contact Information of Researchers:

Samantha Chan, Carleton University, Honours thesis student of Psychology
Email: samanthaechan@cmail.carleton.ca
Julia Fraser, Carleton University, Masters student of Psychology
Email: juliafraser@cmail.carleton.ca
Supervisor: Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University,
kevin.nunes@carleton.ca)

Project Title

Temporal Stability of Attitudes Towards Violence: Part I

Carleton University Project Clearance

Clearance #: 114926 Date of Clearance: December 17, 2020

What are we trying to learn in this research?

The purpose of this study is to explore how much attitudes toward violence change over time. We are trying to learn whether a person’s attitudes toward violence stay the same or change from day to day.

Why is this important to scientists or the general public?

How much and how quickly attitudes toward violence change are important questions for both scientific and applied purposes. Timing the assessment of attitudes and violent behaviour to match the typical rate of change would optimize the ability to accurately appraise the extent to which attitudes influence and predict violent behaviour. If more state-like, then they could be useful for identifying imminent risk for violent behaviour. If more trait-like, then they could be useful treatment targets and for assessing treatment progress and monitoring risk over longer-term time intervals.

What are our hypotheses and predictions?

Attitudes in other areas are generally quite stable (Petty & Krosnick, 2014). We hypothesize that attitudes toward violence are more trait-like in nature, and, therefore, predict that participants’ responses on our questionnaire will remain fairly consistent from one day to the next.
Where can I learn more?

To learn more, visit the Aggressive Cognitions and Behaviour Research (ACBR) lab at Carleton University at https://carleton.ca/acbrlab/ for relevant publications and conference/poster presentations.

Where can I go if I am feeling distressed?

If you feel any distress or anxiety during or after participating in this study, please feel free to contact the Carleton University Health and Counseling Services at: 613-520-6674, or the Distress Centre of Ottawa and Region at 613-238-3311 (http://www.dcottawa.on.ca).

What if I have questions later?

If you have any remaining concerns, questions, or comments about the study, please feel free to contact Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, kevin.nunes@carleton.ca),

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B via email at ethics@carleton.ca).

Thank you for participating in this research!
Appendix G

Extra Tables: Intraclass Correlation Coefficients

Table G1

*Bivariate Intraclass Correlations Between Evaluation of Violence (EVQ) Scores Across Four Days*

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td>.949 [.910, .971]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>.944 [.901, .968]</td>
<td>.974 [.954, .985]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Day 4</td>
<td>.920 [.861, .954]</td>
<td>.977 [.960, .987]</td>
<td>.962 [.934, .978]</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments; 95% CIs included in square brackets, \( n = 52 \).

Table G2

*Bivariate Intraclass Correlations Between Evaluation of Violence (EVQ) Scores Across Four Weeks*

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.958 [.397, .995]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.925 [-.043, .991]</td>
<td>.979 [.872, .997]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.913 [.374, .988]</td>
<td>.960 [.738, .994]</td>
<td>.982 [.867, .997]</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants completed and met the inclusion criteria across all four assessments; 95% CIs included in square brackets, \( n = 6 \).
Table G3

*Bivariate Intraclass Correlations Between Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier*

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.873 [-.146, .987]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.706 [-.239, .966]</td>
<td>.920 [.421, .990]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.651 [-.103, .958]</td>
<td>.880 [.063, .987]</td>
<td>.978 [.387, .998]</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all four assessments, excluding outlier; 95% CIs included in square brackets, $n = 5$. 
Appendix H

Extra Tables: Bivariate Pearson Correlation Coefficients

Table H1

Bivariate Pearson Correlations Between Evaluation of Violence (EVQ) Scores Across Four Days

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td>.912 [.859, .949]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>.905 [.839, .945]</td>
<td>.948 [.910, .970]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Day 4</td>
<td>.859 [.766, .917]</td>
<td>.955 [.923, .974]</td>
<td>.928 [.877, .958]</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across all assessments. All \( p < .001 \), \( n = 52 \).

Table H2

Bivariate Pearson Correlations Between Evaluation of Violence (EVQ) Scores Across Four Weeks

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.976 [.793, .998]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.960 [.669, .996]</td>
<td>.961 [.680, .996]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.960 [.674, .996]</td>
<td>.938 [.527, .993]</td>
<td>.990 [.910, .999]</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across all assessments, \( n = 6 \). All \( p < .01 \).
**Table H3**

*Bivariate Pearson Correlations Between Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier*

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>.936 [.311, .996]</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>.835 [-.181, .989]</td>
<td>.920 [.199, .995]</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>.905 [.112, .994]</td>
<td>.936 [.311, .996]</td>
<td>.986 [.798, .999]</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments, outlier removed; *n* = 5. All *p* < .05, except between Weeks 1 and 3 (bolded).
Appendix I

Extra Tables: Attitude Change

Table I1

Changes in Evaluation of Violence (EVQ) Scores Across Four Days

<table>
<thead>
<tr>
<th>Days</th>
<th>$M_d$</th>
<th>0&lt;sup&gt;a&lt;/sup&gt;</th>
<th>&lt;.11</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt;.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2</td>
<td>.18</td>
<td>15.4 (8)</td>
<td>19.2 (10)</td>
<td>28.8 (15)</td>
<td>21.2 (11)</td>
<td>3.8 (2)</td>
<td>3.8 (2)</td>
<td>7.7 (4)</td>
</tr>
<tr>
<td>1 - 3</td>
<td>.18</td>
<td>11.5 (6)</td>
<td>26.9 (14)</td>
<td>26.9 (14)</td>
<td>21.2 (11)</td>
<td>3.8 (2)</td>
<td>5.8 (3)</td>
<td>3.8 (2)</td>
</tr>
<tr>
<td>1 - 4</td>
<td>.20</td>
<td>15.4 (8)</td>
<td>23.1 (12)</td>
<td>28.8 (15)</td>
<td>11.5 (6)</td>
<td>3.8 (2)</td>
<td>5.8 (3)</td>
<td>9.6 (5)</td>
</tr>
<tr>
<td>2 - 3</td>
<td>.15</td>
<td>11.5 (6)</td>
<td>26.9 (14)</td>
<td>38.5 (20)</td>
<td>13.5 (7)</td>
<td>5.8 (3)</td>
<td>3.8 (2)</td>
<td>0</td>
</tr>
<tr>
<td>2 - 4</td>
<td>.13</td>
<td>17.3 (9)</td>
<td>19.2 (10)</td>
<td>46.2 (24)</td>
<td>9.6 (5)</td>
<td>3.8 (2)</td>
<td>1.9 (1)</td>
<td>1.9 (1)</td>
</tr>
<tr>
<td>3 - 4</td>
<td>.13</td>
<td>21.2 (11)</td>
<td>36.5 (19)</td>
<td>23.1 (12)</td>
<td>13.5 (7)</td>
<td>0 (0)</td>
<td>1.9 (1)</td>
<td>3.8 (2)</td>
</tr>
</tbody>
</table>

Note. Computed using data from participants who completed and met the inclusion criteria across all assessments, $n = 52$.

<sup>a</sup>Percentage ($n$). <sup>b</sup>Absolute values of differences presented.

Table I2

Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks

<table>
<thead>
<tr>
<th>Weeks</th>
<th>$M_d$</th>
<th>0&lt;sup&gt;a&lt;/sup&gt;</th>
<th>&lt;.11</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt;.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2</td>
<td>.16</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>33.3 (2)</td>
<td>16.7 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1 - 3</td>
<td>.23</td>
<td>0</td>
<td>33.3 (2)</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>0</td>
</tr>
<tr>
<td>1 - 4</td>
<td>.32</td>
<td>0</td>
<td>0</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>0</td>
</tr>
</tbody>
</table>
Table I2 (continued)

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Md</th>
<th>0&lt;.11</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt;.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 3</td>
<td>.09</td>
<td>33.3 (2)</td>
<td>50 (3)</td>
<td>0</td>
<td>0</td>
<td>16.7 (1)</td>
<td>0</td>
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<td>.18</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
<td>33.3 (2)</td>
<td>0</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>3 - 4</td>
<td>.11</td>
<td>16.7 (1)</td>
<td>50.0 (3)</td>
<td>16.7 (1)</td>
<td>0</td>
<td>16.7 (1)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments, *n* = 6.

*a* Percentage (*n*).  *b* Absolute values of differences presented.

Table I3

Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Md</th>
<th>0&lt;.11</th>
<th>.11-.20</th>
<th>.21-.30</th>
<th>.31-.40</th>
<th>.41-.50</th>
<th>&gt;.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2</td>
<td>.18</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
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<td>40.0 (2)</td>
<td>20.0 (1)</td>
<td>0</td>
</tr>
<tr>
<td>1 - 3</td>
<td>.26</td>
<td>0</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
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<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
<td>40.0 (2)</td>
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<tr>
<td>2 - 3</td>
<td>.11</td>
<td>20.0 (1)</td>
<td>60.0 (3)</td>
<td>0</td>
<td>0</td>
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<td>40.0 (2)</td>
<td>0</td>
<td>0</td>
<td>20.0 (1)</td>
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<td>20.0 (1)</td>
<td>60.0 (3)</td>
<td>20.0 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments, outlier removed; *n* = 5.

*a* Percentage (*n*).  *b* Absolute values of differences presented.
Appendix J

Extra Tables: Direction of Attitude Change

Table J1

*Direction of Changes in Evaluation of Violence (EVQ) Scores Across Four Days*

<table>
<thead>
<tr>
<th>Days</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>53.8 (28)</td>
<td>15.4 (8)</td>
<td>30.8 (16)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>53.7 (28)</td>
<td>11.5 (6)</td>
<td>34.6 (18)</td>
</tr>
<tr>
<td>1 – 4</td>
<td>48.1 (25)</td>
<td>15.4 (8)</td>
<td>36.5 (19)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>48.1 (25)</td>
<td>11.5 (6)</td>
<td>40.4 (21)</td>
</tr>
<tr>
<td>2 – 4</td>
<td>34.6 (18)</td>
<td>17.3 (9)</td>
<td>48.1 (25)</td>
</tr>
<tr>
<td>3 – 4</td>
<td>26.9 (14)</td>
<td>21.2 (11)</td>
<td>51.9 (27)</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments, \( n = 52 \).

*a Percentage of participants (\( n \)).

Table J2

*Direction of Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks*

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>83.3 (5)</td>
<td>16.7 (1)</td>
<td>0</td>
</tr>
<tr>
<td>1 – 3</td>
<td>100.0 (6)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1 – 4</td>
<td>83.3 (5)</td>
<td>0</td>
<td>16.7 (1)</td>
</tr>
</tbody>
</table>
### Table J2 (continued)

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 3</td>
<td>50.0 (3)</td>
<td>33.3 (2)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>2 – 4</td>
<td>66.7 (4)</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
</tr>
<tr>
<td>3 – 4</td>
<td>66.7 (4)</td>
<td>16.7 (1)</td>
<td>16.7 (1)</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments, *n* = 6.

*a* Percentage of participants (*n*).

### Table J3

*Direction of Changes in Evaluation of Violence (EVQ) Scores Across Four Weeks – Excluding Outlier*

<table>
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<th>Weeks</th>
<th>Decreased</th>
<th>No Change</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
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<td>1 – 2</td>
<td>80.0 (4)</td>
<td>20.0 (1)</td>
<td>0</td>
</tr>
<tr>
<td>1 – 3</td>
<td>100.0 (5)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1 – 4</td>
<td>100.0 (5)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 – 3</td>
<td>60.0 (3)</td>
<td>20.0 (1)</td>
<td>20.0 (1)</td>
</tr>
<tr>
<td>2 – 4</td>
<td>80.0 (4)</td>
<td>20.0 (1)</td>
<td>0</td>
</tr>
<tr>
<td>3 – 4</td>
<td>80.0 (4)</td>
<td>20.0 (1)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* Computed using data from participants who completed and met the inclusion criteria across all assessments, excluding outlier; *n* = 5.
a Percentage of participants (n).
Appendix K

SONA Recruitment Notice – Study 2

Study Title: Temporal Stability of Attitudes Towards Violence: Part II

Description: For this study, participants are asked to complete one 5-minute online survey per week for four weeks in a row. The purpose of this study is to examine how much attitudes toward violence change from one week to the next.

Eligibility Requirements: Undergraduate men who understand written English. (Note that women and other gender identifying individuals will not be permitted to participate in this study).

Risks: The questionnaire contains brief descriptions of typical conflicts and violent behaviours, which may be distressing for some people to read. If descriptions of violence are distressing to you, we do not recommend participating in this study.

Duration and Locale: One 5-minute online survey per week for four weeks in a row.

Compensation: Students will be asked to complete the questionnaire once a week for four weeks in a row. Students will receive a 0.25% increase in eligible courses (PSYC 1001, 1002, 2001, 2002) for each survey they participate in. In participants participate in the full study (i.e., complete all four surveys across all four weeks), they will receive a 1% increase in their course.

Researchers: Julia Fraser (Principal Investigator); Sophie Taljit; Kevin Nunes (Supervisor). Email: juliafraser@cmail.carleton.ca

This study has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance #116272).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085, or via email at ethics@carleton.ca). During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email.
Appendix L

Research Consent Text for Survey – Study 2

Name and Contact Information of Researchers:

Julia Fraser, Carleton University, Department of Psychology
Email: juliafraser@cmail.carleton.ca

Sophie Taljit, Carleton University, Department of Psychology
Email: sophietaljit@cmail.carleton.ca

Supervisor: Dr. Kevin Nunes (Professor, Carleton University, Department of Psychology)
kevin.nunes@carleton.ca

Project Title
Temporal Stability of Attitudes Towards Violence: Part II

Carleton University Project Clearance
Clearance #: 116272 Date of Clearance: November 2nd, 2021

Invitation
We are asking you to complete this survey because you are an undergraduate man registered in one of PSYC 1001, 1002, 2001, or 2002 at Carleton University. This survey is being conducted by Julia Fraser of the Carleton University Department of Psychology (juliafraser@cmail.carleton.ca), working under the supervision of Dr. Kevin Nunes (kevin.nunes@carleton.ca).

Objectives and Summary:
The aim of this study is to better understand how much attitudes toward violence change from one week to the next.

We estimate that each survey will take about 5 minutes to complete. Participation will take place once a week for four weeks in a row. Your participation in this survey is voluntary, and you may choose not to take part, or to not to answer all of the questions. If you decide to withdraw after you submit the survey, we will remove your responses from survey data if you notify the researcher within 2 weeks of data collection. We expect to survey a total of 300 people.

Risks and Benefits:
The questionnaire contains brief descriptions of typical conflicts and violent behaviours, which may be distressing for some people to read. If you do feel distress from answering any of these questions, we invite you to contact Carleton University Health and Counseling Services at: 613-
Compensation:

Should you choose to participate in our survey, you will receive course credit in the eligible course. Participants will receive a 0.25% credit increase for each survey they participate in. If participants complete all four surveys across all four weeks, they will receive a 1% credit increase. Participants are free to withdraw from the study at any time and can withdraw their data for up to two weeks after data collection. Participants who withdraw their data will retain their course credit for any of the surveys they have already completed.

Confidentiality and Data Storage:

We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. No information that discloses your identity will be released or published without your specific consent. Research records may be accessed by the Carleton University Research Ethics Board to ensure continuing ethics compliance.

All data will be kept confidential, unless release is required by law (e.g., child abuse, harm to self or others). The results of this study may be presented or published, but the data will be presented so that it will not be possible to identify you. All research data will be encrypted (or password-protected).

To connect your survey responses across all four assessments, SONA will generate a unique, randomized code for each participant. This will also allow us to grant you course credit through SONA. No identifying information will be stored with the data.

Your data will be stored and protected by Qualtrics on Toronto-based servers, but may be disclosed via a court order or data breach. After the study is completed, we will retain your anonymized data for future research use.

REB Review and Contact Information:

This research has been cleared by Carleton University Research Ethics Board-B (Clearance #116272). If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board by email at ethics@carleton.ca. During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email.

By completing the online survey, you are agreeing to participate in this study.

I voluntarily agree to participate in this study.

☐ Yes
☐ No
Appendix M

Debriefing Form – Study 2

Name and Contact Information of Researchers:
Julia Fraser, Carleton University, Department of Psychology
Email: juliafraser@cmail.carleton.ca

Sophie Taljit, Carleton University, Department of Psychology
Email: sophietaljit@cmail.carleton.ca

Supervisor: Dr. Kevin Nunes (Professor, Carleton University, Department of Psychology, kevin.nunes@carleton.ca)

Project Title
Temporal Stability of Attitudes Towards Violence: Part II

Carleton University Project Clearance
Clearance #: 116272 Date of Clearance: November 2nd, 2021

What are we trying to learn in this research?

The purpose of this study is to explore how much attitudes toward violence change over time. We are trying to learn whether a person’s attitudes toward violence stay the same or change from one week to the next.

Why is this important to scientists or the general public?

How much and how quickly attitudes toward violence change are important questions for both scientific and applied purposes. Understanding the typical rate of change of violent attitudes will allow researchers and clinicians to assess how violent attitudes affect violent behaviour more accurately. If attitudes toward violence change quickly, they could be useful for identifying the imminent risk of violent behaviour. If they change more slowly, attitudes toward violence could be useful as treatments targets, and as a way to assess treatment progress and to monitor violent risk over time.

What are our hypotheses and predictions?

Attitudes in general have been shown to be quite stable (Petty & Krosnick, 2014). We hypothesize that attitudes toward violence are more slowly changing, and trait-like in nature. We therefore predict that our participants’ responses in this survey will not change drastically but will remain consistent from one week to the next. Results of this study can be accessed through the Aggressive Cognitions and Behaviour Research (ACBR) lab website (https://carleton.ca/acbrlab/).
Where can I learn more?

To learn more, visit the Aggressive Cognitions and Behaviour Research (ACBR) lab at Carleton University at https://carleton.ca/acbrlab/ for relevant publications and conference/poster presentations.

Where can I go if I am feeling distressed?

If you feel any distress or anxiety during or after participating in this study, please feel free contact the Carleton University Health and Counseling Services at: 613-520-6674, or the Distress Centre of Ottawa and Region at 613-238-3311 (http://www.dcottawa.on.ca).

What if I have questions later?

If you have any remaining concerns, questions, or comments about the study, please feel free to contact Julia Fraser (Principal Investigator), at: julia.fraser@carleton.ca, or Dr. Kevin Nunes (Supervisor), at: kevin.nunes@carleton.ca.

This research has been cleared by Carleton University Research Ethics Board-B (Clearance #116272). If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B via email at ethics@carleton.ca. During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email.

Thank you for participating in this research!
Appendix N

Email Reminder – Study 2

Subject: Reminder to participate in a research project on Temporal Stability of Violent Attitudes: Part II.

Dear [student name],

My name is Julia Fraser, and I am a Master’s student in the Psychology Department at Carleton University. I am working on a research project under the supervision of Dr. Kevin Nunes.

I am writing to you today because you completed the [first/second/third] survey in a set of four in a study entitled “Temporal Stability of Attitudes Towards Violence: Part II”. This email is being sent to notify you that the [second/third/fourth] survey is now available for you to participate in, for which you have 24 hours to complete. This survey will take approximately 5 minutes for you to complete.

As a reminder, you will receive compensation in the form of a 0.25% credit increase in your Psychology course after completing each survey, for a total of a 1% increase if you complete all four surveys.

This research has been cleared by Carleton University Research Ethics Board B Clearance #116272.

Should you have any ethical concerns with the study, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca). During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email. For all other questions about the study, please contact the researcher. Thank you for your participation!

Sincerely,

Julia Fraser
SONA Recruitment Notice – Study 3

Study Title: Temporal Stability of Attitudes Towards Violence: Part III

Description: For this study, participants are asked to complete one 5-minute online survey per month for three months in a row. The purpose of this study is to examine how much attitudes toward violence change from one month to the next.

Eligibility Requirements: Undergraduate men who understand written English. (Note that women and other gender identifying individuals will not be permitted to participate in this study).

Risks: The questionnaire contains brief descriptions of typical conflicts and violent behaviours, which may be distressing for some people to read. If descriptions of violence are distressing to you, we do not recommend participating in this study.

Duration and Locale: One 5-minute online survey per month for three months in a row.

Compensation: Students will be asked to complete the questionnaire once a month for three months in a row. Students will receive a 0.25% increase in eligible courses (PSYC 1001, 1002, 2001, 2002) for completing surveys 1 and 2, and an additional 0.5% increase for completing survey 3. If participants participate in the fully study (i.e., across all three surveys across all three months), they will receive a 1% increase in their course.

Researchers: Julia Fraser (Principal Investigator); Kevin Nunes (Supervisor).
Email: juliafraser@cmail.carleton.ca

This study has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance #116679).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085, or via email at ethics@carleton.ca).
Appendix P

Research Consent Text for Survey – Study 3

Name and Contact Information of Researchers:
  Julia Fraser, Carleton University, Department of Psychology
  Email: juliafraser@cmail.carleton.ca

  Supervisor: Dr. Kevin Nunes (Professor, Carleton University, Department of Psychology)
  kevin.nunes@carleton.ca

Project Title
  Temporal Stability of Attitudes Towards Violence: Part III

Carleton University Project Clearance
  Clearance #: 116679  Date of Clearance: December 3rd, 2021

Invitation

We are asking you to complete this survey because you are an undergraduate man registered in one of PSYC 1001, 1002, 2001, or 2002 at Carleton University. This survey is being conducted by Julia Fraser of the Carleton University Department of Psychology (juliafraser@cmail.carleton.ca), working under the supervision of Dr. Kevin Nunes (kevin.nunes@carleton.ca).

Objectives and Summary:

The aim of this study is to better understand how much attitudes toward violence change from one month to the next.

We estimate that each survey will take about 5 minutes to complete. Participation will take place once a month for three months in a row. Your participation in this survey is voluntary, and you may choose not to take part, or not to not answer all of the questions. If you decide to withdraw after you submit the survey, we will remove your responses from survey data if you notify the researcher within two weeks of data collection. We expect to survey a total of 300 people.

Risks and Benefits:

The questionnaire contains brief descriptions of typical conflicts and violent behaviours, which may be distressing for some people to read. If you do feel distress from answering any of these questions, we invite you to contact Carleton University Health and Counseling Services at: 613-520-6674, or the Distress Centre of Ottawa and Region at 613-238-3311 (http://www.dcottawa.on.ca).
Compensation:

Should you choose to participate in our survey, you will receive course credit in the eligible course. Participants will receive a 0.25% credit increase for completing surveys 1 and 2, each, and a 0.5% credit increase for completing survey 3. If participants complete all three surveys across all three months, they will receive a 1% credit increase. Participants are free to withdraw from the study at any time and can withdraw their data for up to two weeks after data collection (until April 26th, 2022). Participants who withdraw their data will retain their course credit for any of the surveys they have already completed. There will be a withdraw button on each page of the survey for participants to click if they so wish to withdraw at any point during the survey.

Confidentiality and Data Storage:

We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. No information that discloses your identity will be released or published without your specific consent. Research records may be accessed by the Carleton University Research Ethics Board to ensure continuing ethics compliance.

All data will be kept confidential, unless release is required by law (e.g., child abuse, harm to self or others). The results of this study may be presented or published, but the data will be presented so that it will not be possible to identify you. All research data will be encrypted (or password-protected).

To connect your survey responses across all three assessments, SONA will generate a unique, randomized code for each participant. This will also allow us to grant you course credit through SONA. No identifying information will be stored with the data.

Your data will be stored and protected by Qualtrics on Toronto-based servers, but may be disclosed via a court order or data breach. After the study is completed, we will retain your anonymized data for future research use.

REB Review and Contact Information:

This project was reviewed and cleared by the Carleton University Research Ethics Board. If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board by email at ethics@carleton.ca. During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email.

By completing the online survey, you are agreeing to participate in this study.

I voluntarily agree to participate in this study.

☐ Yes
☐ No
Appendix Q

Debriefing Form – Study 3

Name and Contact Information of Researchers:

Julia Fraser, Carleton University, Department of Psychology
Email: juliafraser@cmail.carleton.ca

Supervisor: Dr. Kevin Nunes (Professor, Carleton University, Department of Psychology, kevin.nunes@carleton.ca)

Project Title

Temporal Stability of Attitudes Towards Violence: Part III

Carleton University Project Clearance

Clearance #: 116679 Date of Clearance: December 3rd, 2021

What are we trying to learn in this research?

The purpose of this study is to explore how much attitudes toward violence change over time. We are trying to learn whether a person’s attitudes toward violence stay the same or change from one month to the next.

Why is this important to scientists or the general public?

How much and how quickly attitudes toward violence change are important questions for both scientific and applied purposes. Understanding the typical rate of change of violent attitudes will allow researchers and clinicians to more accurately assess how violent attitudes affect violent behaviour. If attitudes toward violence change quickly, they could be useful for identifying the imminent risk of violent behaviour. If they change more slowly, attitudes toward violence could be useful as treatments targets, and as a way to assess treatment progress and to monitor violent risk over time.

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Where can I learn more?

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Where can I go if I am feeling distressed?

If you feel any distress or anxiety during or after participating in this study, please feel free to contact the Carleton University Health and Counseling Services at: 613-520-6674, or the Distress Centre of Ottawa and Region at 613-238-3311 (http://www.dcottawa.on.ca).

What if I have questions later?

If you have any remaining concerns, questions, or comments about the study, please feel free to contact Julia Fraser (Principal Investigator), at: julia.fraser@carleton.ca.

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B via email at ethics@carleton.ca. During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email.

Thank you for participating in this research!
Appendix R

Email Reminder – Study 3

Subject: Reminder to participate in a research project on Temporal Stability of Violent Attitudes: Part III.

Dear [student name],

My name is Julia Fraser, and I am a Master’s student in the Psychology Department at Carleton University. I am working on a research project under the supervision of Dr. Kevin Nunes.

I am writing to you today because you completed the [first/second] survey in a set of three in a study entitled “Temporal Stability of Attitudes Towards Violence: Part III”. This email is being sent to notify you that the [second/third] survey is now available for you to participate in, for which you have 24 hours to complete. This survey will take approximately 5 minutes for you to complete.

As a reminder, you will receive compensation in the form of a 0.25% credit increase in your Psychology course after completing surveys 1 and 2, each, and a 0.5% credit increase for completing survey 3, for a total of a 1% increase if you complete all three surveys.

This research has been cleared by Carleton University Research Ethics Board B Clearance #116679. Should you have any ethical concerns with the study, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca). During Covid, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email. For all other questions about the study, please contact the researcher. Thank you for your participation!

Sincerely,
Julia Fraser