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Validating the Voodoo Doll Task as a Proxy for Aggressive Parenting Behavior

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Abstract

Objective—Six studies ($N = 1,081$ general population parents) assessed the validity of the Voodoo Doll Task (VDT) as a proxy for aggressive parenting behaviors.

Methods—Participants were given an opportunity to symbolically inflict harm by choosing to stick “pins” into a doll representing their child.

Results—Individual differences in parents’ trait aggression (Studies 1, 2, and 6), state hostility (Study 3), attitudes towards the corporal punishment of children (Study 4), self-control (Study 6), depression (Study 6), and child physical abuse risk (Study 6) were associated with increased pin usage. Further, parents used more pins after imagining their child perform negative behaviors compared to after imagining their child perform positive behaviors (Study 5). A number of demographic variables also were associated with pin usage: Fathers used pins more than mothers and parents’ education level was inversely related to pin usage. Finally, on average, parents viewed the VDT as slightly uncomfortable, but not objectionable, to complete (Study 6).

Conclusions—Our evidence suggests that the VDT may serve as a useful proxy for parent-to-child aggression.

Keywords

child physical abuse; aggressive parenting; Voodoo Doll Task; aggression paradigm; child maltreatment

Children are sometimes the target of a parent’s aggression: Some parents slap or smack their child, strike their child with an object such as a belt or a switch, or aggress towards their child in a number of other ways. Researchers interested in parent-to-child aggression need tools that allow them to efficiently and accurately measure when and for whom parent-to-child aggression is likely to occur. In this vein, the studies described herein examine the validity of a new proxy measure of parent-to-child aggression—the Voodoo Doll Task (VDT, e.g., DeWall et al., 2013). Specifically, we examined whether known risk factors for

parent-to-child aggression were associated with performance on a parent-child version of the VDT.

The VDT

During the VDT, participants imagine that a “doll” represents a target individual. Participants are then given an opportunity to symbolically inflict harm upon the target individual by choosing to stick pins into the doll. Sometimes participants physically place pins into the doll and sometimes participants merely report how many pins they would like to stick into a visual image of the doll. The number of pins used during the VDT is the outcome variable, with more pins indicating higher levels of aggression.

As noted by DeWall et al. (2013), the hypothesized underlying psychological mechanism of the VDT is that people easily project characteristics of known individuals onto symbolic representations of those individuals (e.g., Rozin, Millman, & Nemeroff, 1986). Thus, sticking pins into the Voodoo doll may be viewed as a proxy for the respondent’s propensity to aggress against the person the doll is intended to represent. To assess the extent to which the VDT could be used as a proxy for adult-to-adult aggression, DeWall et al. conducted a series of validation studies. Their results showed that the number of pins used during the VDT was associated with many known correlates of aggressive behaviors, including trait aggression, inclinations towards intimate partner violence, and other lab-based proxies for aggression. DeWall and colleagues also found evidence for the validity of the VDT in both in-person samples and online samples.

To date, the VDT only has been used to assess adults’ aggression against other adults (e.g., Finkel et al., 2012; Slotter et al., 2012). Although we believe the same psychological mechanism for why the VDT is appropriate for measuring adult-to-adult aggression should generalize to parent-child relationships, our belief alone is insufficient to recommend using a parent-child version of the VDT. Parent-child relationships are different enough from the contexts in which the VDT has previously been used to warrant new, relationship-specific validation work. Thus, six studies examined the validity of the VDT as a measure of parents’ inclination to behave aggressively against their children.

Why Do We Need Another Measure of Aggressive Parenting Behavior?

Researchers have used many methods to assess parent-to-child aggression: retrospective self reports, observational measures, vignettes, and laboratory-based aggression paradigms. Although each approach has contributed to our understanding of aggressive parenting behavior, none are without limitations. The following review discusses these approaches and concludes by noting how a parent-child version of the VDT could help advance research in this area.

Retrospective Self-reports

Numerous measures have been developed to assess parents’ retrospective self-reports of parenting behavior (e.g., Conflict Tactics Scale; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998; Parent Behavior Inventory; Lovejoy, Weis, O’Hare, & Rubin, 1999). These

measures typically ask parents to indicate how frequently they used hostile/coercive/aggressive parenting tactics during a past period of time. Although a valuable source of information, retrospective self-reports may be sub-optimal in situations in which one wants to assess the impact of experimental manipulations on the enactment of parent-to-child aggression. For example, use of retrospective self reports may require following parents over time after a manipulation has been introduced. Limited resources and attrition can threaten the feasibility and integrity of such designs. Moreover, because of the time required for parents' to have opportunities to aggress against their child, self reports of parenting behavior may be insensitive to manipulations designed to cause temporary changes in cognitive/emotional states. Finally, creating a situation that increases parent-to-child aggression can be useful for testing theories of aggressive parenting behaviors. However, using measures of actual parenting behaviors when researchers expect increased parent-to-child aggression may unnecessarily place a child in harm's way.

Observational Measures

Direct observation of parenting behavior has been used in studies of parent-to-child aggression (e.g., Cerezo, D'Ocon, & Dolz, 1996; Dolz, Cerezo, & Milner, 1997). Observational studies typically involve recording parents interacting with their child(ren). These recordings are subsequently coded for the presence of various behaviors, some of which may be aggressive. Concerns related to the use of observational measures include (1) reliably coding complex sequences of interactions is often difficult and resource intensive, (2) behaviors displayed during structured tasks and/or in laboratory settings may not generalize to naturally-occurring parent-child interactions, and (3) merely being observed may affect parent-child interactions. Moreover, researchers may be required to intervene in the event that parent-to-child aggression escalates during a data collection session.

Vignette Measures

Researchers also have used parents' responses to hypothetical vignettes to measure their self-reported likelihood to aggress against the described child (e.g., Caselles & Milner, 2000; Irwin, Skowronski, Crouch, Milner, & Zengel, 2013; Montes, de Paúl, & Milner, 2001). In studies using vignettes, parents typically read descriptions of a child's behavior, after which they respond to a series of questions designed to examine how they would think/feel/ behave in the situation described in the vignette (e.g., How likely are you to feel angry?; How likely are you to hit/slap the described child?). Vignettes are useful in that they are easy to administer in either paper-and-pencil studies or online studies, and can be adapted for a wide range of research questions. However, vignettes are limited in that they assess how respondents *believe* they would respond to a situation, which may not correspond with how they actually would respond.

Laboratory-Based Aggression Paradigms

CPA researchers also have used laboratory-based aggression paradigms to assess parent-to-child aggression (e.g., Bugental, Lewis, Lin, Lyon, & Kopeikin, 1999; Crouch et al., 2012; de Paúl, Pérez-Albéniz, Ormaechea, Vergara, & de Cádiz, 2006). Researchers using these paradigms engineer situations in which parents complete a task and parental aggression is

inferred based on task performance. Typical tasks involve an adult interacting with a child remotely through computers in either a collaborative task or a competitive game. In reality, but unbeknownst to the parents, there are no children involved in these studies. During these tasks, parents are given opportunities to provide feedback (e.g., mad faces) or send punishments (e.g., aversive sound blasts) to the (non-existent) child. The delivery of negative/aversive stimuli to the child is used as a proxy for parent-to-child aggression.

Although useful for assessing parent-to-child aggression, laboratory-based aggression paradigms are not free of limitations (e.g., Ritter & Eslea, 2005). Such tasks typically require elaborate cover stories involving deception and require special equipment (e.g., computers, headphones), which may limit the settings in which these paradigms can be used. Moreover, some have raised questions about whether performance on these laboratory-based tasks is a valid indicator of aggression, or whether it reflects other motives (e.g., Ferguson, 2010; Ritter & Eslea, 2005; c.f., Anderson & Bushman, 1997; Giancola & Zeichner, 1995). For example, providing feedback to a child during a learning task may reflect motivations to help the child learn and improve their performance rather than aggression, even if that feedback is negative.

Advantages Associated With Using the VDT

The VDT possesses a number of desirable characteristics while overcoming some limitations of other measurement strategies. Specifically, the VDT (a) requires no deception; (b) can be completed in a few minutes; (c) does not require recording, coding, or elaborate equipment to administer or score; (d) can be used in both online studies and in-person studies; (e) pin-insertion behavior straightforwardly reflects aggression, and not other motives; and (f) allows parents to symbolically aggress against a child while minimizing risk of harm to that child. Finally, because the VDT is quick and easy to administer, it can be administered shortly after an experimental manipulation and may be sensitive to temporary changes in cognitive/emotional states (e.g., Finkel et al., 2012). For these reasons, we believe the VDT can potentially provide CPA researchers with another tool for studying parent-to-child aggression.

Overview of the Current Research

We conducted six studies to examine the validity of the VDT to assess parents' inclinations to aggress against their child. In each of the current studies, parents imagined that an outline of a person represented their child and were told that they could stick "pins" into the outline to inflict harm on or physically punish their child. The current studies assessed the extent to which constructs theoretically related to parents' tendencies to aggress against their children also were associated with VDT performance. In each study, a construct was either measured (Studies 1–4, Study 6) or manipulated (Study 5) prior to parents completing the VDT. Additionally, we examined parents' self-reported motives for using pins in the VDT (Study 5) and their perceptions of completing the VDT (i.e., Study 6).

Prior to data collection the current research was approved by the human subjects review board at the authors' institution. All stimuli needed to replicate the studies and all data needed to replicate our analyses for the current studies can be acquired either by contacting

the first author or by visiting his account on the Open Science Framework (<https://osf.io/xm2n4/>). Finally, we report all data exclusions (if any), all manipulations, and all measures in our studies (Simmons, Nelson, & Simonsohn, 2012).

In each study, the number of pins used during the VDT was a count variable (i.e., nonnegative integers) and the distribution of pin usage was positively skewed with the modal number of pins chosen being zero. Thus, we analyzed parents' pin usage using negative binomial regression. In addition to the coefficients, which indicate the direction of the relationship, we also report rate ratios (RR), which indicate the change in pin usage associated with a one unit increase in the predictor variable. In each analysis, we also explored the effects of parents' gender on pin usage. Separate analyses for mothers and fathers can be acquired in online supplemental materials (<https://osf.io/xm2n4/>).

General Methods Studies 1–5

In Studies 1–5, parent participants completed a Human Information Task (HIT) on Amazon.com's Mechanical Turk (MTurk). Data collected on MTurk have been found to be reliable (e.g., Buhrmester, Kwang, & Gosling, 2011) and produce effects similar to those produced by face-to-face data collection (e.g., Casler, Bickel, & Hackett, 2013). In all of our studies, we restricted our samples to participants in the United States and parents could participate in our studies only once.

When the HIT was accepted, participants were forwarded to the survey. After providing consent, participants verified that (a) they were at least 18 years old, (b) they were the parent of a child who was currently less than 18 years old, and (c) their child lives with him/her at least part time. Participants were automatically exited from the survey if they failed any of these screening questions. They then answered questions that were unique to each study, completed the VDT, and reported demographic information. When completing the VDT, all parents viewed an outline of a child, imagined the outline represented their child, and indicated how many pins they would like to stick into the doll representing their child. After being debriefed, participants' MTurk accounts were compensated.

Study 1

We believe that increased pin usage during the VDT represents increased inclination for parent-to-child aggression. Thus, in Study 1 we hypothesized that a measure of parents' trait aggression would be positively associated with the number of pins selected during the VDT.

Sample

Of 122 people who viewed the survey, 106 were included in the final sample (one did not provide consent, seven were not currently parents, three did not provide any data, and five quit before completing the VDT). The final sample was mostly female (62%), White (68%, 16% African American, 7% Asian American, 6% Hispanic, 2% American Indian, < 1% Pacific Islander, < 1% missing), married (58%; 14% single or never married, 14% part of an unmarried couple, 8% divorced, 5% separated, and < 1% widowed), and employed (63%).

Ninety-six percent of the sample graduated from high school or higher. The mean participant age was 34.86 years ($SD = 8.58$).

Procedures

After meeting the inclusion criteria, participants completed the Buss-Perry Aggression Questionnaire-short form (BPAQ-SF). The BPAQ-SF is a 12-item questionnaire that contains four subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility (Bryant & Smith 2001; Buss & Perry, 1992). Example items are “*given enough provocation, I may hit another person*” and “*I have trouble controlling my temper.*” Respondents rated each item on a scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). The BPAQ-SF is correlated with the full-length BPAQ ($r = 0.96$) and has similar psychometric properties (e.g., Bryant & Smith, 2001; Webster et al., 2013). The BPAQ correlates with peer-nominated aggression (Buss & Perry, 1992), real-life aggression (Bushman & Wells, 1998), and lab-based aggression measures (e.g., Finkel et al., 2012; Webster et al., 2013).

Participants then read the following statements on the computer screen, “All parents feel annoyed or angered by their children at times. We are interested in a time when your child made you angry.” Parents were presented text boxes in which they responded to the following questions “Where were you when your child made you annoyed or angry?” and “What did your child do that made you annoyed or angry?” The next screen contained an outline of a child. Participants were told to imagine the outline represented the child they wrote about and that they could choose to stick “pins” into the imagined child. To increase the likelihood they were imagining their child, parents typed the initials of the child they were imagining in a text box and then typed the number of pins (0–51) they would “stick” into their imagined child. This range of pins is consistent with DeWall et al. (2013). Finally, participants reported demographic information, were debriefed, and received \$0.15 as compensation for participation.

Results and Discussion

Eighty-six parents (81%) chose to use zero pins and 20 parents (19%) chose to use between 1 and 45 pins ($M = 1.34$, $SD = 5.67$, $Mdn = 0.00$). As expected, parents’ trait aggression was positively associated with the number of pins selected ($B = 1.82$, $p < .001$, $RR = 6.17$, 95% CI [4.03, 9.44]). Each subscale of the BPAQ-SF also was significantly and positively associated with pin usage (see Table 1). To explore whether parents’ gender qualified the relationship between their (mean-centered) trait aggression and pin usage, variables representing parent gender (0 = female, 1 = male) and the Gender $\times$ Trait Aggression interaction were entered into our model. Parents’ trait aggression did not interact with their gender: Gender $\times$ Trait Aggression interaction ($B = 0.27$, $p = .59$).

Study 2

We had two goals in Study 2: To replicate the findings of Study 1 and to assess the extent to which parents’ socially-desirable responding might affect VDT performance. Consistent with DeWall et al. (2013), we hypothesized that the association between parents’ trait

aggression and pin usage would remain after controlling for parents' tendency to respond in a socially-desirable manner. Also, because some parents may associate pin usage with a specific aggressive act (e.g., spanking a child's butt), we asked parents to separately select pins to stick into the front of a child and into the back of a child.

Sample

Of the 265 potential participants who visited the survey, 226 were included in the final sample (two did not provide consent, 17 were not currently parents, four did not have a child living with them at least part time, and 16 persons did not complete the VDT). The final sample was mostly female (68%), White (70%; 12% African-American, 8% Hispanic, 6% Asian/Asian-American, 4% American Indian, < 1% missing), married (60%; 16% single/never married, 13% member of unmarried couple, 8% divorced, 3% separated), employed (52%), and 98% had graduated from high school or higher. The mean participant age was 34.54 years ($SD = 8.81$).

Procedures

After meeting the inclusion criteria, parents completed the BPAQ-SF and the brief version of the Marlowe-Crowne Social Desirability Scale ($\alpha = .69$; Strahan & Gerbasi, 1972). This social desirability scale contains 20-items that ask participants to indicate whether a statement is true of them. An example item is "*I'm always willing to admit it when I make a mistake.*" Exactly as in Study 1, participants wrote about a time their child angered them, completed the VDT, and reported demographic information. Unlike Study 1, parents reported how many pins they would like to stick into the front (0–51) of the imagined child and into the back (0–51) of the imagined child. Finally, parents reported demographic information, were debriefed, and received \$0.15 as compensation for their participation.

Results and Discussion

Parents' pin usage in the front of the child and pin usage in the back of the child were highly correlated, $r = 0.86$, 95% CI [0.82, 0.89], so we used parents' total pin usage as our outcome. One hundred eighty-three parents (81%) chose zero pins to stick into the child and 43 parents (19%) chose between one and 102 pins to stick into the child ($M = 2.82$, $SD = 10.90$, $Mdn = 0.00$). As expected, parents' trait aggression was positively associated with pin usage, ($B = 0.58$, $p < .001$, $RR = 1.79$, 95% CI [1.52, 2.12]). Although in the same direction, the magnitude of this association is weaker than the association observed in Study 1. Further, this pattern was found for each subscale of the BPAQ-SF (see Table 1). Parents' (mean-centered) social desirability was negatively associated with pin usage ($B = -0.21$, $p < .001$) but did not strongly interact with trait aggression ($B = 0.10$, $p = 0.06$). At the mean level of social desirability (i.e., social desirability = 0), the association between parents' (mean-centered) trait aggression and pin usage remained significantly positive, ($B = 0.77$, $p < .001$).

After controlling for the main effects of parents' gender, parents' social desirability, and all possible interactions (i.e., Gender $\times$ Social Desirability; Gender $\times$ Trait Aggression; Social Desirability $\times$ Trait Aggression; Gender $\times$ Social Desirability $\times$ Trait Aggression), parents' trait aggression remained a significant predictor of pin usage ($B = 0.61$, $p < .001$). Thus,

parents' socially-desirable responding and parents' gender weaken, but do not eliminate, the association between parents' trait aggression and pin usage. Finally, parents' pin usage into the front of the child and into the back of the child was highly correlated. Thus, it does not appear that parents associate pin usage with a specific aggressive act such as spanking a child.

Study 3

Whereas Studies 1 and 2 demonstrated that trait aggression was associated with pin usage, Study 3 examined whether a state measure of hostility would be positively associated with pin usage. Also, in an attempt to increase pin usage we framed the VDT as a way for parents to "get out any bad feelings" prior to exiting the survey.

Sample

Of 135 people who viewed the survey, 104 were included in the final sample (one did not provide consent, 18 were not currently parents, two did not have a child living with them at least part time, and 10 did not complete the VDT). The final sample was mostly female (56%), White (72%, 12% African American, 6% Asian American, 6% Hispanic, 4% Native American), married (64%; 14% unmarried member of couple, 10% single, never married, 8% divorced, 4% separated, <1% widowed), employed (57.7%), and 98% of the sample had graduated from high school or higher. The mean participant age was 34.89 years ($SD = 9.48$).

Procedures

After meeting the inclusion criteria, participants completed the State Hostility Scale ($\alpha = 0.96$; e.g., Anderson, Deuser, & DeNeve, 1995): a 35-item scale in which participants indicate their level of agreement on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale to items such as "*I feel furious*" and "*I feel aggravated*." The State Hostility Scale is sensitive to situations known to increase aggressive behaviors such as exposure to hot temperatures (e.g., Anderson et al., 1995) and violent media (e.g., Anderson, Carnagey, & Eubanks, 2003). After the State Hostility Scale, participants completed the VDT. Participants were told that writing about a time their child angered them may be upsetting and that we wanted to provide an opportunity for parents to "get out any bad feelings" prior to exiting the survey. Parents reported the number of pins (0–51, each) they would like to "stick" into the front of their child and into the back of their child. Finally, parents reported demographic information, were debriefed, and received \$0.15 as compensation for their participation.

Results and Discussion

Parents' pin usage in the front of the child and pin usage in the back of the child were highly correlated, $r = 0.96$, 95% CI [0.95, 0.98], so we used parents' total pin usage as our outcome. Ninety parents (87%) selected zero pins and 14 (13%) chose between 2 and 85 pins to stick into their child ($M = 3.46$, $SD = 12.85$, $Mdn = 0.00$). As expected, parents' state hostility was positively associated with the number of pins selected to stick into their imagined child ($B = 2.19$, $p < .001$, $RR = 8.90$, 95% CI [5.32, 14.90]). Parents' (mean centered) state hostility did not significantly interact with their gender: Gender $\times$ State

Hostility interaction ($B = -0.84, p = .14$). Thus, pin usage is reliably associated with a measure of parents' state hostility. Finally, framing the VDT as a way to express negative feelings did not increase pin usage.

Study 4

Whereas in Studies 1–3 we included variables that predict general aggression, in Study 4 we used a predictor variable that assessed parents' endorsement of items that were specifically about aggression against children. Also, to assess whether pin selection is affected by different response formats, parents in the current study made their pin selection using a Likert-type scale rather than by reporting the number of pins that would be used. We hypothesized that parents' endorsement of the corporal punishment of children would be positively associated to pin usage.

Sample

Out of 255 people who viewed the survey, 230 were included in the final sample (15 were not currently parents, one did not have a child living with them at least part time, and nine did not complete the VDT). The final sample was mostly female (73%), White (79%; 10% African-American, 6% Hispanic, 3% Asian/Asian-American, 2% Native American, < 1% missing), and married (68%; 8% unmarried member of couple, 10% single, never married, 10% divorced, 4% separated, < 1% widowed). Half of the sample was employed (49.1%), and 98% had graduated from high school or higher. The mean participant age was 34.43 years ($SD = 8.38$).

Procedures

After consenting to participate and meeting the inclusion criteria, participants completed the Corporal Punishment of Children subscale of the Revised Attitudes Towards Violence scale ($\alpha = 0.92$; e.g., Anderson, Benjamin, Wood, & Bonacci, 1995). This is an 8-item subscale on which participants indicated their level of agreement on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Example items are “*a child's habitual disobedience should be punished physically*” and “*young children who refuse to obey should be whipped.*” Participants followed the same procedure used in Studies 1–3: They wrote about a time their child angered them and viewed the outline of a child. Then, using an eleven-point Likert-type scale, participants separately selected the number of pins (0–10) they would like to stick into the front of their imagined child and into their back of the imagined child. Unlike Study 3, the VDT was not described as a way to “get out any bad feelings.” Finally, participants reported demographic information, were debriefed, and received \$0.07 as compensation for their participation.

Results and Discussion

Parents' pin usage in the front of the child and pin usage in the back of the child were highly correlated, $r = 0.94$, 95% CI [0.92, 0.95], so we used parents' total pin usage as our outcome. One hundred eighty-six parents (81%) selected zero pins to stick into their child and 44 (19%) chose between 1 and 20 pins ($M = 1.02, SD = 3.02, Mdn = 0.00$). Parents' corporal-punishment attitudes were positively associated with pin usage ($B = 0.77, p < .001$,

$RR = 2.16$, 95% CI [1.74, 2.68]). Parents' (mean centered) corporal-punishment attitudes interacted with their gender: Gender $\times$ Corporal Punishment Attitude interaction ($B = 1.04$, $p = .001$). Although corporal-punishment attitudes significantly predicted mothers' pin usage ($B = 0.51$, $p = .001$, $RR = 1.68$, 95% CI [1.25, 2.26]), the relationship was stronger for fathers ($B = 1.55$, $p < .001$, $RR = 4.72$, 95% CI [2.83, 7.89]). The current study demonstrated that parenting-specific constructs predict parents' pin usage. Finally, changing the response format for pin selection did not affect the base rate of pin usage.

Study 5

Whereas Studies 1–4 used individual difference variables to predict pin usage, in Study 5 we wanted to demonstrate that VDT performance is sensitive to manipulated factors. Immediately prior to completing the VDT, we randomly assigned parents either to imagine their child behaving negatively or to imagine their child behaving positively. We hypothesized that parents who imagined their child behaving negatively would use more pins than parents who imagined their child behaving positively. After completing the VDT, parents reported their reasons for their pin selection. Finally, to be clear about what pin usage represents, we explicitly instructed parents to only use pins if they would “physically punish” their imagined child.

Sample

Of the 260 persons who visited the survey, 118 were assigned to the negative condition and 101 to the positive condition (two persons did not provide consent, 10 were not currently parents, two did not have a child living with them at least part time, and 27 did not complete the VDT). The final sample was mostly female (73%), White (70%, 17% African American, 5% Asian American, 5% Hispanic, 2% Native American, < 1% Pacific Islander, < 1% missing), married (57%; 15% part of an unmarried couple, 14% single or never married, 8% divorced, 5% separated, and < 1% widowed), employed (54%), and had graduated from high school or higher (97%). The mean participant age was 33.64 years ($SD = 9.05$).

Procedures

After meeting the inclusion criteria, participants were randomly assigned to view either negative brief vignettes or positive brief vignettes. Parents were instructed to imagine that the vignettes described their own child. In the negative condition, parents saw four brief vignettes: “You walk into your child’s room to find that she/he threw all of his/her things on the floor and made a mess (toys, clothing, anything on the bed or shelves),” “You find your child cutting his/her own hair,” “Your child is being loud in the other room. You tell him/her to quiet down, and they do not. Seconds later, she/he breaks one of your lamps,” and “You take your child out shopping. She/he brings you something she/he wants. When you tell him/her ‘no,’ your child throws a fit.” In the positive condition, parents saw four brief vignettes: “You walk into your child’s room to find that she/he cleaned it as well as they could, without you telling them to,” “You find your child quietly playing or doing homework,” “Your child is being loud in the other room. You tell him/her to quiet down, and she/he does,” and “You take your child out shopping. She/he brings you something she/he wants. When you tell him/her ‘no’, your child puts it back without a fight.”

After reading all four vignettes, participants were asked to think of their own child while they completed the VDT: Parents separately selected the number of pins (0–10) they would like to “stick” into the front of their child and into the back of their child using the same response format as Study 4. Further, in the current study, we told parents that pins can be used to “physically punish” their imagined child. Participants then viewed a text box and wrote why they chose that number of pins. Before debriefing, in an attempt to minimize the impact of the procedure, participants in the negative condition responded to two of the positive prompts. Finally, participants reported demographic information, were debriefed, and received \$0.07 as compensation for their participation.

Results and Discussion

Parents’ pin usage in the front of the child and pin usage in the back of the child were highly correlated, $r = 0.90$, 95% CI [0.87, 0.92], so we analyzed parents’ total pin usage. Among the 101 parents in the positive condition, 91 (90%) chose to use zero pins and 10 (10%) chose to use between 1 and 11 pins ($M = 0.22$, $SD = 1.15$, $Mdn = 0.00$). In comparison, among the 118 parents in the negative condition, 89 chose to use zero pins (75%) and 29 (25%) chose to use between 1 and 20 pins ($M = 1.08$, $SD = 3.12$, $Mdn = 0.00$). Pin usage significantly differed between the positive condition and the negative condition ($B = 1.61$, $p < .001$, $RR = 4.98$, 95% CI [2.95, 8.42]). Parents’ gender did not qualify the effect of the condition on pin usage: Gender $\times$ Condition interaction ($B = -0.16$, $p = .79$).

Two independent coders classified the open-ended responses for why parents chose the number of pins during the VDT. The level of inter-coder agreement ($Kappa = .68$) is typically considered substantially above chance (Landis & Koch, 1977). Discrepancies were discussed and resolved by the two coders and the first author. Seven motive categories were identified (see Table 2). As expected, parents most often used pins when they indicated that their motive was to physically punish their child. Overall, parents who indicated their motive was to physically punish their child used more pins than parents who did not indicate that motive ($B = 1.64$, $p < .001$). This difference was found both for parents in the positive child condition ($B = 2.14$, $p < .001$) and the negative child condition ($B = 1.41$, $p < .001$); however, condition and parent motive did not interact ($B = -0.74$, $p = .25$). Also, all of the parents who indicated that they would not physically punish their child or they were uncomfortable with the VDT did not to use any pins.

In the current study, pin usage was explicitly framed as a way parents could “physically punish” their child and our analysis of open-ended responses strongly suggests that is indeed how parents interpreted the VDT. Thus, there is little ambiguity in the conclusion that parents in the negative condition (symbolically) physically punished their imagined child more than parents in the positive condition.

Study 6

Participants who completed Studies 1–5 were recruited through MTurk and completed their study online. The purpose of Study 6 was to use the VDT with a sample of parents who completed the study in-person and had to physically place stickers (i.e., “pins”) onto a representation of their child. We also examined the association between additional measures

that assessed CPA risk factors and VDT performance. Specifically, we hypothesized that parents' trait aggression, depression, and risk for child physical abuse would be positively associated to pin usage and that parents' dispositional self-control would be negatively associated with pin usage. Finally, parents were explicitly instructed that they could select pins to inflict "harm" upon their imagined child.

Sample

Participants were recruited from the community through flyers or were contacted because they had previously participated in a parenting study and agreed to be contacted for additional study opportunities. Of the 197 persons who were recruited for a study about parenting behaviors, one person was not currently a parent. This left a final sample of 196 parents. Participants identified mostly as Black or African American (60%; 31% White, 5% Hispanic, 3% Native American, < 1% Asian/Asian-American, < 1% missing) and female (70%). Further, the sample varied in marital status, with 30% single/never married, 27% married, 22% dating more than six months, 6% dating less than six months, 9% divorced, 4% separated, and 2% widowed. In addition, 95% of the sample had graduated high school or higher. The mean participant age was 34.11 years ($SD = 11.91$).

Procedures

After consenting to participate, parents were taken individually to a small research room to complete the study. The study consisted of three stages. First, parents completed 3 measures: the Center for Epidemiological Studies Depression Scale ($\alpha = 0.88$; CES-D), the Buss-Perry Aggression Questionnaire ($\alpha = 0.90$; BPAQ; Buss & Perry, 1992), and the Self-Control Scale ($\alpha = 0.71$; e.g., Tangney, Baumeister, & Boone, 2004). Second, participants completed a computer-based task as part of an unrelated study. This unrelated study lasted approximately 15 minutes and did not involve any between-participants conditions. Participants then completed a second set of measures. Specifically, participants completed a paper version of the VDT: Participants wrote about a time their child angered them, viewed a page containing an outline of a child, and were told to imagine that the outline represented the child they wrote about. They were then given ten small, round stickers they could use to "harm" the child by placing them onto the outline of the child. Stickers were counted as being used if they were placed onto the outline of the child. Participants then answered nine questions about their perceptions of the study and of the VDT, completed the Child Abuse Potential ($\alpha = 0.94$; CAP) Inventory (Milner, 1986), and reported demographic information. Finally, participants were debriefed, thanked, and paid \$20 for their participation.

Results and Discussion

Pin usage—The number of stickers (0–10) that were placed onto the outline of a child was used as the main outcome variable. One hundred fifty-six parents (80%) chose to use zero pins and 40 (20%) chose to use between 1 and 10 pins ($M = 0.82$, $SD = 2.12$, $Mdn = 0.00$). Parents' pin usage was positively associated with parents' trait aggression ($B = 0.83$, $p < .001$, $RR = 2.30$, 95% CI [1.69, 3.15]; analyses for pin usage for each subscale of the BPAQ can be found in Table 1), and parents' depression ($B = 0.08$, $p < .001$, $RR = 1.08$, 95% CI [1.05, 1.11]), and negatively associated with parents' trait self-control ($B = -0.41$, $p = .05$,

$RR = 0.67$, 95% CI [0.45, 0.99]). Parents' gender did not qualify the associations between pin usage and parents' (mean-centered) trait aggression (Gender $\times$ Trait Aggression, $B = -0.10$, $p = .75$) or the association between pin usage and parents' self-control (Gender $\times$ Self-Control, $B = 0.33$, $p = .45$). However, parents' (mean-centered) depression significantly interacted with gender: Gender $\times$ Depression, $B = -0.10$, $p = .01$. Although depression significantly predicted mothers' pin usage ($B = 0.06$, $p < .001$, $RR = 1.06$, 95% CI [1.03, 1.09]), the relationship was stronger for fathers ($B = 0.15$, $p < .001$, $RR = 1.16$, 95% CI [1.09, 1.24]).

One hundred four parents had valid scores on the CAP Inventory: 62 low-risk parents (i.e., valid CAP score less than 166) and 42 high-risk parents (i.e., valid CAP score 166 or greater). Ten (16%) parents who were classified as low risk for child physical abuse used between 1 and 10 pins and 15 (36%) high-risk parents used between 1 and 10 pins. High risk parents' pin usage was 2.81 times that of low risk parents ($B = 1.04$, $p < .001$, $RR = 2.81$, 95% CI [1.58, 5.03]). Parents' CAP classification did not interact with parents' gender (Gender $\times$ CAP Classification interaction $B = 0.91$, $p = .15$).

Perceptions of Study 6 and VDT—Table 3 shows parents' responses to nine items asking about their perceptions of the VDT using a scale with points labeled *1=strongly disagree*, *2=disagree*, *3=neither agree nor disagree*, *4=agree*, and *5=strongly agree*. On average, parents viewed the VDT as slightly uncomfortable to complete, but did not object to its use in research.

Demographic Variables Associated with VDT Performance

A number of demographic variables are reliably associated with CPA (see Stith et al., 2009). To maximize statistical power, we combined the data from each of the six current samples into one dataset. This combined dataset contained 1,081 parents; however, due to missing values, individual analyses reflect smaller numbers of parents. Also, because various response formats were used across the different studies, we recoded parents' pin usage as a dichotomous outcome (0 = no pin used and 1 = one or more pins used) for these analyses. The results from these analyses are presented in Table 4.

In the combined dataset, parents' age was unassociated with pin usage, r_{pb} ($n = 1,072$) = $-.04$, $p = .20$. Parent gender was associated with pin usage, χ^2 (1, $n = 1,072$) = 18.80, $\phi = .13$, $p < .001$: 26% of fathers used one or more pins whereas only 15% of mothers used one or more pins, $OR = 2.00$, 95% CI [1.46, 2.75]. Using the data from Studies 1, 2, and 6 combined, there was a main effect for parents' gender ((coded 0 = female and 1 = male; $B = 0.59$, $p = .02$) and for parents' trait aggression ($B = 0.53$, $p = .01$), but there was not a Gender $\times$ Trait Aggression interaction ($B = 0.20$, $p = .51$). Parent pin usage decreased as parents' education levels increased, χ^2 (4, $n = 1,076$) = 4.20, $p = .04$, Cramer's $V = .08$. Of the 26 parents reporting less than a high school degree, 23% used pins. In comparison, 21% of parents whose highest level of education was high school, 19% of those with some college or who attended technical college, 19% of those with a 4-year college degree, and 11% of parents who held an advanced degree used one or more pins. Finally, parental

marital status was unassociated with pin usage, $\chi^2(5; n = 1,071) = 4.94, p = .42$, Cramer's $V = .07$.

Discussion

Across six independent samples including over 1,000 parents, we found evidence for the validity of the VDT as a proxy for parents' child-directed aggression. Specifically, we demonstrated that individual differences (e.g., trait aggression, state hostility, attitudes towards the corporal punishment of children, depression, self-control, and risk for CPA), manipulated factors (e.g., imagining your child behaving negatively), and demographic variables (e.g., parent gender and parent education level) associated with aggressive parenting were all related to the number of pins used during the VDT. We also gathered evidence for the validity of the VDT as a proxy for aggressive parenting behaviors in both online samples of parents and in samples of parents who completed an in-person version of the VDT.

Limitations

Despite the overall positive results, there are several considerations for researchers who may use the VDT. First, we observed a negative association between socially-desirable responding and pin usage. Although socially-desirable responding did not account for the relationship between parents' trait aggression and pin usage, researchers should take precautions to minimize the extent to which socially-desirable responding could mask true effects when using the VDT. Second, parents reported slight discomfort when completing the VDT. However, parents also agreed, on average, that it is acceptable for others to complete the VDT and, if given the opportunity, most would have participated again. Future research should investigate ways to minimize parents' discomfort while maintaining the positive characteristics of the VDT. Although overall pin usage was low and parents' social desirability was inversely related to pin usage, some parents may have used pins because they believed the VDT was foolish or nonsensical, which would result in over-estimating aggressive inclinations among those individuals. Finally, some readers may be concerned about the artificiality of the VDT. On the face of it, the VDT looks nothing like "real world" parent-to-child aggression. We concede that the VDT is contrived and artificial: Parents are not often in a position to stick pins into Voodoo dolls of their children. However, these superficial aspects of the VDT do not invalidate the evidence we provide in the current manuscript.

In addition to the limitations mentioned in the previous paragraph, there are a number of directions to extend the validation work of the current studies. First, we did not associate VDT performance with another indicator of aggressive parenting behaviors. For example, DeWall et al. (2013) associated pin usage with self-reported aggression against an intimate partner and with performance in a lab-based aggression paradigm. Similar studies should be conducted to examine whether other measures of parental aggression are associated with VDT performance. Second, we did not assess the reliability of the VDT. DeWall et al. reported test-retest reliability greater than $r = 0.50$ over four weeks. Future studies should test the temporal stability of the VDT for parent-child relationships. Finally, we did not test

the VDT across cultures. There may be cultural differences in the extent to which parental aggression against children is acceptable, which underscores the importance for CPA researchers to validate the VDT in populations they intend to study.

Research Implications

Although the essence of the VDT was the same across studies, pin usage in the current studies was consistently lower than research that uses the VDT to assess adult-to-adult aggression (e.g., DeWall et al., 2013; Finkel et al., 2012), which has implications for research planning. All else being equal, a lower base rate of pin usage weakens statistical power.

In attempts to increase parents' pin usage, we made slight modifications to the ways parents selected pins and the way we described the VDT to parents. Our results did not depend on the pin usage response format: We asked parents to report the number of pins they would like to stick into their child, indicate pin usage on a Likert-type scale, or physically place pins (i.e., stickers) onto an outline of a doll that represented their child. Similarly, our results did not depend on the way in which the VDT was described: We framed the VDT as a way to "get out bad feelings," a way to "physically punish" a child, and a way to inflict "harm" upon a child. Although our attempts to increase parents' pin usage with these modifications were ultimately unsuccessful, these findings suggest the parent-child VDT is robust to minor variations in the way the task is applied. Thus, it seems that researchers can slightly modify the parent-child VDT to meet their individual research needs without compromising the validity of the task.

Clinical and Policy Implications

Based on the current data, the VDT may be useful for assessing parents' propensity to aggress against their child either during a risk assessment or for an outcome measure in a program evaluation. We believe the VDT would be most informative in these situations when it is used as an additional piece of supporting evidence in conjunction with other assessment tools rather than as a stand-alone assessment measure. Notably, because the VDT does not involve deception, the VDT can be administered to the same parents on multiple occasions as part of a longitudinal assessment.

Conclusions

The data presented in this article strongly suggest that the VDT task is a useful measure for researchers interested in parents' child-directed aggression. The utility of the VDT may be particularly high in situations in which researchers need a safe, simple, and quick strategy for assessing parent-to-child aggression. We have made all of the stimuli needed for using the VDT publicly available (<https://osf.io/xm2n4/>) and incorporating the VDT into an existing CPA research study only adds a few minutes to participation time. Thus, the barriers to further studying the psychometric characteristics of the VDT or using the VDT as an outcome variable in future research are minimal.

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Table 1

Association between trait aggression and pin usage: Studies 1, 2, and 6

Predictor	Study	M	SD	α	B_0	B_1	95% CI	
							LL, UL	RR
Physical	1	1.77	0.92	.86	-.51	1.40	1.05, 1.74	4.04
	2	1.67	0.82	.78	0.91	0.51	0.34, 0.68	1.67
	6	2.08	0.77	.78	-.29	0.57	0.30, 0.84	1.77
Verbal	1	1.99	0.83	.81	-.63	1.46	1.11, 1.80	4.29
	2	2.01	0.88	.81	0.91	0.54	0.36, 0.71	1.71
	6	2.38	0.83	.77	-.28	0.50	0.25, 0.75	1.65
Anger	1	1.99	0.92	.82	-.34	1.17	0.86, 1.47	3.20
	2	1.89	0.89	.82	0.82	0.65	0.49, 0.82	1.92
	6	1.97	0.75	.75	-.37	0.81	0.52, 1.10	2.24
Hostility	1	2.31	1.10	.87	-.19	0.98	0.68, 1.27	2.66
	2	2.33	1.13	.88	0.96	0.31	0.19, 0.43	1.37
	6	1.89	0.81	.86	-.32	0.57	0.33, 0.81	1.77
Total	1	2.02	0.75	.90	-.75	1.82	1.39, 2.25	6.17
	2	1.98	0.75	.90	0.88	0.58	0.42, 0.75	1.79
	6	2.05	0.65	.90	-.36	0.83	0.52, 1.15	2.30

Note. CI = confidence interval, LL = lower limit, UL = upper limit, RR = rate ratio. B_0 is the coefficient for the predictor variable in the left-hand column. Studies 1 and 2 used the BPAQ-SF and Study 6 used the full-length BPAQ. Coefficients for Study 2 are after controlling for mean-centered Social Desirability ($\alpha = .69$). All coefficients are significant at $p < .001$.

Table 2

Frequency of parents' self-reported motives for using pins in Study 5

Motive coding	Example	Number of parents in coding category		Number of parents who used pins	
		Positive condition	Negative condition	Positive condition	Negative condition
Would not physically punish.	"I don't physically punish my children."	43	65	0	0
Would physically punish.	"Because the child should have been spanked for bad behavior."	9	16	8	16
Would punish, but not physical.	"I believe in discipline with a child but not beating them."	5	6	0	2
Child doesn't deserve it.	"I didn't see any reason to punish my child based on the scenarios that were presented."	26	16	0	5
Answer does not make sense, or parent does not understand.	"I think so choose number" or "Because your task made no sense what so ever."	6	7	2	5
Emotional response.	"Very angry."	0	1	0	1
Uncomfortable with pins.	"The idea of this is repulsive to me."	11	7	0	0

Note. This table represents parents' self-reported motives for choosing the number of pins they would like to stick into their child (Positive condition: 101 parents, Negative Condition: 118 parents).

Table 3

Parents' perceptions of the VDT: Study 6

Question	<i>M</i> (<i>SD</i>)	95% CI [LL, UL]	<i>M</i> minus mid-point	<i>d</i> from mid-point
I felt uncomfortable completing the "Voodoo Doll" task.	3.90(1.47)	3.70, 4.13	0.90	0.61
I felt bad completing the "Voodoo Doll" task.	3.53(1.50)	3.31, 3.75	0.53	0.35
All in all, I would say it is ethical for people to participate in this study.	3.67(1.12)	3.56, 3.89	0.67	0.60
I felt that the researcher pressured me to do things I did not want to in this study.	1.42(0.78)	1.29, 1.52	-1.58	-2.03
I felt that I could stop the study at any time.	4.34(1.09)	4.19, 4.51	1.34	1.23
The researcher treated me with respect in this study.	4.72(0.69)	4.62, 4.82	1.72	2.49
I believe it is OK to have participants complete the "Voodoo Doll" task.	3.26(1.35)	3.15, 3.53	0.26	0.19
I believe it is OK for other people to participate in this study.	4.24(0.81)	4.18, 4.40	1.24	1.53
If given the chance, I would participate in this study again.	4.35(0.85)	4.26, 4.50	1.35	1.59

Note. This table represents parents' perceptions of their participation in Study 6 and of completing the VDT. Parents' ratings were made on a scale with points labeled 1=*strongly disagree*, 2=*disagree*, 3=*neither agree nor disagree*, 4=*agree*, and 5=*strongly agree*.

Table 4

Parents' demographic information and pin usage

	<i>n</i>	Used pins		χ^2	Cramér's <i>V</i>
		No	Yes		
Gender				18.80 ^a	.13
Mothers	739	628	111		
Fathers	333	246	87		
Education				4.20 ^b	.08
< High school	26	20	6		
High school	187	148	39		
Some college	437	353	84		
4-year degree	293	238	55		
Advanced degree	133	119	14		
Relationship Status				4.94 ^c	.07
Married	590	484	106		
Unmarried couple	166	137	29		
Single/never married	172	131	41		
Divorced	90	77	13		
Separated	43	35	8		
Widowed	10	9	1		

Note. This table represents parents' demographic information from Studies 1–6 and whether parents did not use pins or whether parents used one or more pins. This table contains information from 1,081 parents; however, due to missing values, individual stratifications reflect smaller numbers of parents.

^a *df* = 1, *p* < .001.

^b *df* = 4, *p* = .04.

^c *df* = 5, *p* = .42.