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## **Growing up to be fearful? Social evaluative fears during adolescence**

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### **Citation**

Sumter, S. R. (2010, March 2). *Growing up to be fearful? Social evaluative fears during adolescence*. Retrieved from <https://hdl.handle.net/1887/15050>

Version: Not Applicable (or Unknown)

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**Note:** To cite this publication please use the final published version (if applicable).

## CHAPTER 5

## The robustness of the factor structure of the Self-Restraint Scale: What does self-restraint encompass?

*This chapter has been published as: Sumter, S.R., Bokhorst, C.L., & Westenberg, P.M. (2008). The Robustness of the Factor Structure of the Self-Restraint Scale: What Does Self-Restraint Encompass. Journal of Research in Personality, 42, 1082-1087.*

### Abstract

In contrast with the original version of the Self-Restraint Scale (SRS; [Weinberger, D.A., & Schwartz, G. E. (1990). Distress and restraint as superordinate dimensions of self-reported adjustment: A typological perspective. *Journal of Personality, 58*, 381-417]), confirmative factor analysis did not support a four-factor solution. In the current study an exploratory factor analysis revealed a three-factor structure. Although the original subscales suppression of aggression, consideration of others, and impulse control were confirmed by the data, responsibility did not fit within the overall concept of self-restraint. These results provide some indication that although the subscales can be used independently, the way self-restraint is conceptualized should be reconsidered. Future studies are needed to confirm the factor structure observed in the current study.

### Introduction

Self-restraint can be defined as the suppression of egoistic desires (Weinberger, 1998) and “the internalized ability to regulate one’s emotions, attention and behavior” (Raffaelli & Crockett, 2003; p. 1037). Due to physical, personal or social restrictions posed upon the individual, getting what you want some-

times requires restraint of initial responses. For very young children it is often quite difficult to employ self-restraint (Siegler, Deloache, & Eisenberg, 2006). In the literature this skill is also referred to as the ability to delay immediate gratification (Putnam, Spritz, & Stifter, 2002). Over the course of development from infancy through young adulthood this ability to delay immediate gratification improves and a mature level of self-restraint is attained. Moderate levels of self-restraint are considered mature, seeing that they are more effectual than extreme levels. Like under-control (i.e. inability to delay gratification), over-control or disproportional self-restraint can be maladaptive. Over-control is linked to the use of neurotic defenses (Letzring, Block, & Funder, 2005; Weinberger, 1998).

A scale that is frequently used in studies on adolescent and adult populations is the Self-Restraint Scale (SRS) by Weinberger and Schwartz (1990). This scale has been used among clinical and community groups, and delinquents (Weinberger, 1997; Huckaby, Kohler, Garner & Steiner, 1998; Giese-Davis & Spiegel, 2001). Self-restraint is said to reflect socio-emotional adjustment. The scale has also been used as a measure of psychosocial maturity and as a predictor of various outcome measures. As a measure of maturity self-restraint has been included in Cauffman and Steinberg's model of psychosocial maturity (2000). Subscales of the SRS were used to measure impulse control and consideration of others, and used as indices of maturity (Cauffman & Steinberg, 2000).

The SRS encompasses four subordinate elements which were derived rationally. They are different manifestations of self-control and restraint. According to Weinberger (1998) self-control is driven by intrapersonal goals (Impulse Control), interpersonal goals (Suppression of Aggression and Consideration of Others) and communal goals (Responsibility).

Although the four subscales presented above have been statistically validated (Weinberger, 1997), evidence has also been provided for at least one alternative model of the SRS (Farrel & Sullivan, 2000). Farrel and Sullivan (2000) suggested that the subscale Consideration of Others should not be considered as part of self-restraint, while the other subscales were part of self-restraint.

In their samples the four-factor model was tested with a confirmatory factor analysis and the fit for this model was adequate. However, if Consideration of Others was not included in the higher order model the fit improved.

Personality research might also put forward an alternative model. In the field of personality typology, including Big 5 models, some aspects of self-restraint as formulated by Weinberger are considered part of distinct personality factors. For instance, impulse control would be linked to neuroticism, while consideration of others is more likely to be placed alongside agreeableness. While Farrel and Sullivan (2000) argued that responsibility does fit under the umbrella of self-restraint, responsibility also seems to overlap with constructs reflecting morality. Due to the presence of these alternative models, it seems appropriate to reconsider the structure of the SRS.

Although the subscales are themselves reliable and useful in research, the argument that these four facets can all be identified as different aspects of self-restraint is less convincing. Therefore, the current study will focus on the factor structure of the SRS, which will be re-examined in light of possible alternative models. For this purpose, a confirmatory factor analysis will be performed on the four-factor model proposed by Weinberger (1997). In case of a less than good fit, alternative models will be investigated using exploratory factor analyses.

## Method

### Participants

The sample consisted of 481 children and adolescents between the age of 10 and 18 (mean age = 13.78,  $SD = 2.32$ ). The gender distribution in the sample was fairly balanced: 255 girls and 226 boys. Seven schools participated in this study, i.e. 3 primary schools, 2 secondary schools, and 2 higher education schools. All children and adolescents attended regular schools at various academic levels. The schools were located in Leiden, The Netherlands and the surrounding region, representing both small and large towns.

**Self-Restraint Scale from the Weinberger Adjustment Inventory (Weinberger & Schwatz, 1990)**

The Self-Restraint Scale (SRS) is a hierarchical scale that measures four inter-related but distinct dimensions. The original dimensions are: Impulse Control (8 items, e.g. "I stop and think thing through before I act"), Consideration of Others (7 items, e.g. "I often go out of my way to do things for other people"), Suppression of Aggression (7 items, e.g. "If someone does something I really don't like, I yell at them about it."), and Responsibility (8 items, "People can depend on me to do what I know I should."). The SRS has proven to be a reliable scale that can be used with both children and adults from a community or clinical setting (Weinberger, 1997). The same four-factor structure was confirmed for all groups. In addition, it has been shown that the scale successfully predicts problem behaviour during the teenage years (Farrell & Sullivan, 2000).

The Dutch translation used in the current study was based on an existing translation (Vazsonyi, Pickering, Junger, & Hessing, 2001). This version was slightly adapted for use with early adolescents from age 10. All the items were retained. The wording of some items was simplified to make them easier to understand. The changes were made in collaboration with a professional translator. The Cronbach's alpha for the four subscales were calculated, .84 for Suppression of Aggression, .67 for Consideration of Others, .74 for Impulse Control, and .71 for responsibility. The overall reliability was .88.

**Procedure**

The current data were collected as part of a larger study. A booklet with several questionnaires was administered in class at the different schools. The participants were asked to provide some demographic information and to complete all questionnaires, including the SRS. A teacher and at least one master student were present at the time of testing to assist the participants if necessary. Before filling out the questionnaires, brief instructions were given to emphasize that there were no right or wrong answers.

## Results

### Confirmatory factor analysis

A confirmatory factor analysis was performed to examine the fit of the original four-factor structure of the scale as proposed by Weinberger (1997). Additionally, the one factor structure was examined. The confirmatory factor analyses were both performed on the same sample ( $n = 481$ ) using EQS 6.1 for Windows.

In general, the Chi square has been proposed as appropriate fit index to test a model's quality, however because Chi square is heavily affected by the sample size of a study it is recommended to present supplementary fit indices, e.g. Comparative Fit Index (CFI) and Goodness of Fit Index (GFI). For a reasonably good model fit the CFI and the GFI should exceed .90 (Kline, 2005). If a small sample is used the Root Mean-Square Error of Approximation (RMSEA) should be presented as well, RMSEA below .06 indicates an acceptable model fit (Hu & Bentler, 1999).

The fit of the one factor model was poor ( $\chi^2 (405) = 1816.984, p < .001$ ; CFI=.641, GFI=.733, and RMSEA= .085). The fit of the four-factor model was adequate, but not very good ( $\chi^2 (399) = 1101.356, p < .001$ ; CFI=.822, GFI=.852, and RMSEA= .061). The fit of the four-factor model did not compare well with the fit indices presented by Weinberger (1997). Therefore, an exploratory factor analysis (EFA) was performed to investigate whether a superior model could be proposed.

### Exploratory factor analysis

To investigate the factor structure of the scale an EFA was performed. The Kaiser-Meyer-Olkin measure of sampling adequacy was .866, which is regarded as very good, hence a factor analysis could be performed on all items (Hutcheson & Sofroniou, 1999).

The EFA with Promax rotation was used to study the factor structure in the current data. The scree-plot indicated a three-factor solution with eigenvalues of respectively 7.27, 2.59, and 1.91 (See Fig. 1). The three factors explained 39.23% of the variance.

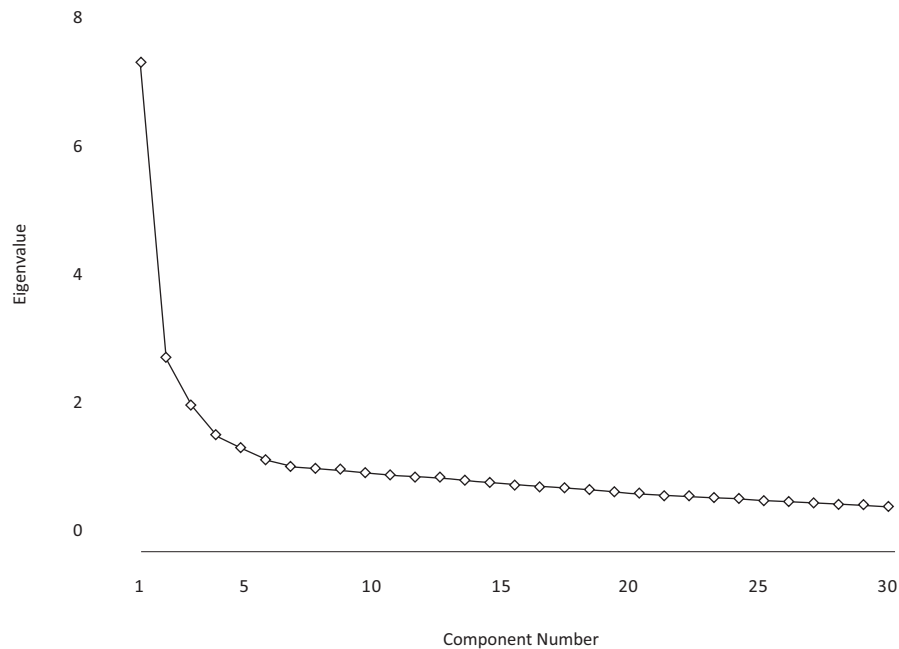


Figure 1. Scree-plot of the Self-Restrain Scale

Items that loaded above .4 and had no strong secondary loadings (i.e.  $>.40$ ) on one of the other two factors were included in the final scale (see Table 1). From the original 30 items, 18 items were retained. The three interpretable factors reflect Suppression of Aggression (7 items), Consideration of Others (6 items), and Impulse control (7 items). The Responsibility scale did not emerge within this study. Responsibility items loaded strongly on more than one factor or not at all.

The four and two-factor solution were also explored. The four-factor solution only provided one interpretable factor, i.e. Suppression of Aggression. On the basis of the content of the items, it might also be expected that the items diverge in two factors. This would be a set of items related to helping others while another set of items would be more related to impulse control. A forced two-factor model was also tested with an EFA, but the resulting factors could not easily be labeled.

Table 1. Items Retained in Self-Restraint Scale after Exploratory Factor Analysis (EFA) with Promax Rotation and the Respective Factor Loadings\*

	SA	IC	CO	Original scale
Suppression of Aggression (SA)				
Item 6: people better watch out	.71	.33	.13	SA
Item 30: fight back	.78	.31	.31	SA
Item 10: get even	.72	.36	.23	SA
Item 22: lose my temper	.71	.38	.17	SA
Item 28: say something mean	.70	.20	.27	SA
Item 20: yell at them	.64	.39	.21	SA
Item 25: pick on people	.58	.36	.28	SA
Impulse Control (IC)				
Item 18: do new and different things	.31	.71	.13	IC
Item 2: will try anything once	.28	.61	.14	IC
Item 15: tend to get carried away	.44	.58	.23	IC
Item 12: become "wild and crazy"	.41	.56	.32	IC
Item 8: do things without enough thought	.26	.55	.51	IC
Item 24: say first thing that comes into my mind	.29	.50	.47	IC
Item 3: try harder to control myself	.12	.41	.12	IC
Consideration of Others (CO)				
Item 16: will not cause problems for other people	.22	.27	.74	CO
Item 19: think how it will affect people around me	.17	.23	.74	CO
Item 26: not to hurt other people's feelings	.31	.12	.65	CO
Item 7: think about other people's feelings	.15	.21	.61	CO
Item 11: enjoy doing things for other people	.24	-.08	.49	CO
Item 1: help other people	.35	-.03	.41	CO
Excluded item, including Responsibility (RESP)				
Item 27: think before I act	.20	.50	.70	IC
Item 5: do things for other people	.05	-.31	.09	CO
Item 4: do things that are against the law	.46	.59	.33	RESP
Item 9: take things that don't really belong to me	.22	.23	.34	RESP
Item 13: do things that are not fair to people	.50	.27	.33	RESP
Item 14: will cheat if no one will find out	.33	.33	.24	RESP
Item 17: break laws and rules	.47	.59	.25	RESP
Item 21: do what I should	.10	.10	.46	RESP
Item 23: do things that aren't right	.46	.66	.26	RESP
Item 29: stay out of trouble	.27	.46	.44	RESP

\* The items presented in the table are abbreviations of the complete items.



The Cronbach's alphas of the three scales were .84 for Suppression of Aggression, .73 for Consideration of Others, and .71 for Impulse Control.

## Discussion

The Dutch Weinberger SRS (Vazsonyi et al., 2001) was adapted and in the current study the factor structure of the instrument was tested among youth (age 10–18). Confirmatory factor analyses showed that the fit of the four-factor and one-factor structure was not very good. An alternative factor solution is proposed based on the results of an exploratory factor analysis. Instead of the original four-factor structure, including impulse control, responsibility, suppression of aggression, and consideration of others, a three-factor model explained the data best.

The three scales that emerged in this study were interpretable and coincided with remaining scales of the original instrument. Especially the Suppression of Aggression and Consideration of Others subscales seem robust, with few secondary loadings. Only two items were excluded, one loaded strongly on two factors (i.e. item 27), while the other loaded negatively (i.e. item 5). The wording of item 5 might have been too complicated and not well understood by the participants.

In the new model the Responsibility scale was absent. The items of this subscale loaded strongly on more than one factor or not at all. When a four-factor solution was forced the Responsibility, Impulse Control and Consideration of Others items interspersed, leaving only one interpretable factor, i.e. Suppression of Aggression.

Even though exploratory factor analyses is a useful method of analyses to investigate possible clusters, this method results in a preliminary model (Costello & Osborne, 2004). While the current paper is not able to provide a definite alternative to the original factor solution, it is a first step in challenging the dimensionality of the Self-Restraint Scale. Future studies, conducting a confirmatory factor analysis on the proposed three-factor solution of the self-restraint, are needed to make more conclusive claims. For the current study a professional translator was employed to ensure the quality of the translation. However, the fact that a translation was used and the results could be

due to differences in language or culture, should be taken into consideration. Therefore, a cross-validation of the factor structure should ideally be done in an American sample where the original scale can be used.

While Farrel and Sullivan (2000) found that consideration of others was not a key characteristic of self-restraint, in the current study responsibility did not fit within the overall model. When self-restraint is thought to reflect someone's ability to delay immediate gratification, one can imagine several instances of irresponsible behavior executed with strong self-restraint. For instance, a person might be very calculating and wait for the right moment to break the law to make sure he won't be punished. In this case the person might not endorse responsibility items, while being high in self-restraint. Responsibility may actually be strongly intertwined with other personality characteristics, like morality. This might explain why the responsibility facet did not emerge as clearly from the analyses as the three others.

Finally, if self-restraint is considered to be an aspect of psychosocial maturity, it is necessary to investigate its concurrent validity. Hence, in future studies such a comparison could be made using validated measures of psychosocial maturity, like the Sentence Completion Task for Youth (Westenberg et al., 2000) or the Psychosocial Maturity Inventory (Greenberger & Bond, 1984). Moderate correlations between measures of psychosocial maturity and the Self-Restraint Scale would be expected. Furthermore, age differences comparing children, adolescents and adults and gender differences should be studied. These type of studies might also shed some light on how the different aspects included in self-restraint converge. Studying the age differences for the different subscales might reveal different trajectories. This could be an indication of a smaller overlap between the facets of self-restraint than originally assumed.

