



International Journal of Developmental
and Educational Psychology

ISSN: 0214-9877

fvicente@unex.es

Asociación Nacional de Psicología
Evolutiva y Educativa de la Infancia,
Adolescencia y Mayores

Murteira Morgado, Alice; da Luz Vale Dias, Maria

PERSONALITY AND GENDER: WHAT DO THEY TELL US ABOUT ADOLESCENT
ANTISOCIAL BEHAVIOUR?

International Journal of Developmental and Educational Psychology, vol. 1, núm. 1, 2014,
pp. 417-425

Asociación Nacional de Psicología Evolutiva y Educativa de la Infancia, Adolescencia y
Mayores
Badajoz, España

Available in: <http://www.redalyc.org/articulo.oa?id=349851780043>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in redalyc.org

redalyc.org

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative

PERSONALITY AND GENDER: WHAT DO THEY TELL US ABOUT ADOLESCENT ANTISOCIAL BEHAVIOUR?

Alice Murteira Morgado. Maria da Luz Vale Dias

University of Coimbra – Faculty of Psychology and Educational Sciences. alicemmorgado@gmail.com

<http://dx.doi.org/10.17060/ijodaep.2014.n1.v1.390>

Fecha de recepción: 14 de Febrero de 2014

Fecha de admisión: 30 de Marzo de 2014

ABSTRACT

Personality refers to a set of relatively stable traits that determine a characteristic style of interaction between the individual and the environment. Nevertheless, during adolescence and early adulthood there may be some changes in personality associated with psychosocial development, influencing the involvement of individuals in different social interactions. The role of personality traits on antisocial behaviours is well acknowledged as well as the existence of important differences between boys and girls in what concerns the frequency and severity of antisocial manifestations.

The presented research was conducted in order to provide a more complete understanding of gender differences on adolescent antisocial behaviour and to verify what personality characteristics may facilitate antisocial tendencies in boys and girls during this developmental stage.

For that purpose, we gathered a sample of 489 students between the 5th and the 12th grades, attending schools in the region of Coimbra. They filled collectively, in classroom, the Portuguese versions of the Youth SelfReport's "antisocial" factor (Achenbach, 1991; Fonseca et al., 1999) and the Eysenck's Personality Questionnaire for Children (Fonseca, & Eysenck, 1989), while their parents were asked to fill the Portuguese version of Child Behaviour Checklist's "opposition/immaturity" and "aggressive behaviour" factors (Achenbach, 1991; Fonseca et al., 1994).

Our results confirm the existence of significant differences between boys and girls in personality and antisocial tendencies, and show differences in personality between individuals with lower and higher antisocial tendencies. The role of psychoticism on antisocial behaviour was also evident, indicating a possible mediating effect of impulsivity on the relation between gender and antisocial behaviour in adolescence.

Keywords: personality, gender, differences, antisocial, behaviour

PERSONALITY AND GENDER: WHAT DO THEY TELL US ABOUT ADOLESCENT ANTISOCIAL BEHAVIOUR?

BACKGROUND

Personality can be defined in different ways and its considerable amount of definitions is well illustrative of the existing plurality of perspectives. In a broader sense, there is a general agreement that personality refers to a set of relatively stable (across time and across situations) and lasting characteristics that distinguish a person in particular and determine a characteristic style of interaction between the individual and the surrounding physical and social environment (Kimmel, 1984 *in* Lima, 1997). However, it must be noted that there may be some changes over time in some personality traits, especially during adolescence/early adulthood, reflecting normative changes related to psychosocial development (Blonigen, Littlefield, Hicks & Sher, 2010).

From this point of view, it becomes clear that there is a mutual influence between personality and social relations: "perhaps so many aspects of personality predict social competence because social functioning requires a wide array of skills, including emotional expression, emotional understanding, and emotional and behavioural regulation" (Robin, Bukowski & Parker *in* Shiner & Caspi, 2008, p. 205). Indeed, personality and individual dispositions play an important role in social behaviours in the sense that each person brings to his/her relationships a set of individual traits and characteristics that may influence the way he/she interacts with others, and "the social situations in which individuals find themselves are determined, at least in part, by their personality" (Eysenck & Eysenck, 1985, p.313). Likewise, people's personalities are also shaped by their social interactions and contexts. In fact, there is evidence that prior personality characteristics can predict social relations and, conversely, that social relations may predict changes in personality over time (Robins, Caspi & Moffitt, 2002). Moreover, the children and adolescents' personalities may contribute to determine in which activities they participate and in which ways they will spend their free time (Shiner & Caspi, 2008).

The study of personality in the scope of antisocial behaviours appears, therefore, especially pertinent and there is a vast array of literature on this matter that has tested the hypothesis that there are differences in personality between individuals who manifest and do not manifest antisocial tendencies. Actually, a comprehension of an antisocial individual's personality may help to understand his/her social behaviour and vice-versa, thus contributing as part of a model that intends to be extensive and complete. "Taking personality into account implies accepting the existence of cognitive, affective, and behavioural tendencies that may favour delinquency" (Romero, Luengo & Sobral, 2001, p. 344-345), which means that, more than looking for particular preferences for one or another type of antisocial behaviours, we should focus as well on personality characteristics related to the tendency to break rules and to the refusal/inability to follow social rules. In other words, it is essential to understand what characteristics make an individual more vulnerable to adopt antisocial behaviours than others.

In this purpose, Eysenck's theory of personality (Eysenck & Eysenck, 1985) stands out as one of the most referred and tested theories of personality in regard to antisocial behaviours' investigations. The author postulates the existence of three traits of personality: Extraversion (E), Neuroticism (N), and Psychoticism (P). The first one refers to a scale that goes from high energy, sociability, stimulation seeking, activity, assertiveness, to social isolation and stimulation avoidance. Individuals high on extroversion tend to be less responsive to conditioning than those who score lower on this trait (introverts). The neuroticism trait defines a scale that goes from emotional instability and spontaneity, tension, irrationality and feelings of guilt, to high reflection and deliberation. Therefore, individuals with high neuroticism tend to be more susceptible to anxiety and quick emotional arouse, whereas those who have low scores on this trait tend to react more slowly. The psychoticism trait describes a continuum that goes from aggressiveness, egocentrism, toughness, and impulsivity, to empathy and caution. Hence, individuals with high psychoticism tend to be more impulsive and insensitive to others' feelings, while individuals with low scores on psychoticism tend to be more caring and empathic.

Regarding antisocial individuals, the same author has suggested a specific profile consisting on a configuration of the three personality traits of his model that have ever since been widely tested and discussed (e.g. Center & Kemp, 2002). The premise is that individuals with antisocial tendencies present high scores on the three traits— extroversion, neuroticism, and psychoticism – and low scores on the Lie scale (L) from the Eysenck's Personality Questionnaire (EPQ).

Overall, there is one aspect that appears to be widely pointed out by authors and researchers as characteristic of individuals with antisocial tendencies: impulsivity. Indeed, "boys who were more impulsive have a high-

er risk of developing antisocial behaviour than those who were not impulsive" (Carrasco, Barker, Tremblay & Vitaro, 2006, p. 1317). Impulsivity is clearly a consensual prominent characteristic of antisocial individuals (Carrasco et al., 2006; Caspi, 2000; DeLisi & Vaughn, 2008; Dodge, Coie & Lynam, 2008; Farrington, 2004; Fonseca & Simões, 2002; McEachern & Snyder, 2012; Moffitt, 2006; Romer et al., 2009; Romero et al., 2001) and has been found to be strongly associated with Eysenck's trait of Psychoticism (Cale, 2006; Colder et al., 2011), the trait that has shown the most significant relation with antisocial behaviours. Impulsivity is often mentioned together with references of lack of selfcontrol, weak constraint or failure to delay gratification, that is, a smaller tendency to

choose a larger, more desired delayed reward instead of a smaller, less desired, but immediate reward (Baumann & Odum, 2012). It should be noted, at this point, that impulsivity, as a general trait, has been found to decline from adolescence to adulthood (Blonigen et al., 2010; Steinberg et al., 2009), which may imply that, in general, as adolescents grow into adulthood, they will tend to become less prone to antisocial behaviours. Undoubtedly, adolescence is a stage when sensation-seeking behaviours are at its highest levels and it is possible that such behaviours may be not only a characteristic of this period of development, but also "necessary to develop essential social competences to achieve independency in adulthood" (Luna, 2010, p. 333). In fact, it has been suggested that "normative changes in personality may play a significant role in desistance from crime and antisocial behaviour during the transition from late adolescence to early adulthood" (Blonigen, 2010, p. 98). It is also possible that "experience gained during the adolescent period may help adults to recognize the hazards of some forms of risk taking or to provide skills to constrain such activity" (Romer, Duckworth, Szitman & Park, 2010, p.327), thus reducing the prevalence of antisocial behaviours in early adulthood.

In sum, a general assumption in literature regarding this matter is that there are, indeed, some particular personality characteristics that make individuals more likely to follow antisocial paths. Such characteristics include difficulty in inhibiting behaviour and a perception of antisocial behaviours as rewarding. In fact, impulsivity and difficulty in delaying gratification are generally pointed out by researchers as central characteristics of individuals who tend to engage in antisocial behaviours.

Another interesting point concerns the role of gender in antisocial behaviours. It should be noted beforehand that the majority of investigations on antisocial behaviours focus on male offending and, in comparison, studies regarding female antisocial tendencies are relatively rare. Nevertheless, gender differences in antisocial behaviour have been widely recognized (Bennett, Farrington & Huesmann, 2005; Berkout, Young & Gross, 2011; Fergusson & Horwood, 2002; Lahey et al., 2006; Moffitt, 2006; Tremblay, 2010). Such differences begin with the types of antisocial behaviour that are adopted by males and females, with the former being more likely to engage in overt forms of antisocial behaviour and the latter having greater tendency to adopt covert forms, specially by the time they reach adolescence (Tremblay, 2010). The most consistently mentioned differences, though, do not refer so much to the developmental trajectories of offending as to the rate of antisocial manifestations (Fergusson & Horwood, 2002). In fact, research has consistently demonstrated that the frequency in behaviour problems is much higher in males than it is in females, since "females as a group have been shown to experience lower levels than males of risk factors" (Moffitt & Caspi, 2001, p. 369), whereas boys are more prone to engage in antisocial behaviours from a very young age. Moreover, it appears that even for girls with behaviour problems there is a smaller tendency to engage in more extreme forms of antisocial manifestations when compared to boys (Berkout et al., 2011). Gender, indeed, appears to be one of the most robust predictors of antisocial behaviour and one of the most consensual topics in this matter.

OBJECTIVES

Considering the presented background, this study, as part of a broader study intended to understand the role of individual, family and social variables on the antisocial phenomenon, focuses on the role of personality and gender on adolescent antisocial behaviour. Our aim was to understand if there are and what are the behavioural and personality differences between boys and girls and what are the personality differences between those who manifest and do not manifest antisocial tendencies. Therefore, based on the presented theoretical framework four

PERSONALITY AND GENDER: WHAT DO THEY TELL US ABOUT ADOLESCENT ANTISOCIAL BEHAVIOUR?

hypothesis were raised:

H1: Boys present higher antisocial tendencies than girls.

H2: There are significant personality differences between boys and girls.

H3: There are significant personality differences between adolescents who manifest and do not manifest antisocial tendencies.

H4: Personality traits (psychoticism, extraversion, and neuroticism) predict antisocial tendencies.

PARTICIPANTS

The sample for this part of the study was gathered in three schools from the region of Coimbra (Portugal) and included all the individuals who, together with their parents, agreed to collaborate. Hence, our sample is occasional and composed of 489 individuals (39,5% males and 60,5% females), predominantly from medium socioeconomic status (49,6%), aged 9 to 17 years old (mean=12,61) and attending school between the 5th and the 12th grades, as shown in table 1.

Table 1. Sample Description

	Freq.	%
Gender		
Male	193	39,5%
Female	295	60,5%
TOTAL	489	100%
Age		
9	13	2,7%
10	81	16,6%
11	87	17,8%
12	66	13,5%
13	82	16,8%
14	68	13,9%
15	25	5,1%
16	40	8,2%
17	27	5,5%
TOTAL	489	100%
School Year		
5	83	17,0%
6	94	19,2%
7	74	15,1%
8	75	15,3%
9	79	16,2%
10	23	4,7%
11	43	8,8%
12	18	3,7%
TOTAL	489	100%
Socioeconomic Status		
Low	63	12,9
Medium	243	49,6
High	183	37,5
TOTAL	489	100%

In terms of their antisocial tendencies, participants were divided into two groups according to the scores obtained in YSR' and CBCL' measures. Hence, one group was composed of individuals with mean scores and below the mean, while the second group included individuals who scored, at least, one standard deviation above the mean of the sample. As presented in table 2., almost 37% of individuals self-reported antisocial tendencies above the mean score of the sample. When considering reports by parents, almost 14% individuals presented high opposition/immaturity scores and almost 12% show high scores in aggressive behaviour.

Table 2. Behavioural Measures

	Mean	Std. Dev.	Cut-point	N above mean	% above mean
YSR Antisocial	2,39	2,746	5,136	180	36,8%
CBCL Opposition/Immaturity	4,22	4,164	8,384	68	13,9%
CBCL Aggressive Behaviour	1,42	2,046	3,466	57	11,7%

METHOD

The choice of assessment measures for this research was guided by the strength of their psychometric characteristics, the allowed filling conditions (collectively and anonymously), their accessibility to different reading levels, and the potential for replication in different cultural contexts (e.g., internationally). Therefore, sociodemographic conditions were firstly assessed through a sociodemographic questionnaire created specifically for this research, divided into two parts: one for the parents and one for their children. The parents' section included questions regarding the individuals' living conditions in order to determine socioeconomic status, while the children's section was composed of several questions regarding their gender, age, school year and involvement in certain types of antisocial behaviour. Parents were also asked to fill the Child Behaviour Checklist (CBCL, Achenbach, 1991; Portuguese Version by Fonseca et al., 1994), with particular focus on the factors of "opposition/immaturity" (includes items regarding tantrums, yelling, arguing, etc.), and "aggressive behaviour" (with items about lying, destroying things, aggression, etc.). Adolescents filled collectively, in the classroom, the Youth SelfReport (YSR, Achenbach, 1991; Portuguese Version, Fonseca et al., 1999), more specifically, its "antisocial" factor, composed of items related to cruelty, disobedience, fights and threats, etc.). They also filled the Eysenck's Personality Questionnaire for Children – Portuguese Version (EPQ-J, Fonseca, & Eysenck, 1989) organized in three scales, consisting on Eysenck's personality dimensions ("psychoticism", "extraversion", and "neuroticism"), and scale of "lie" (measure of social naivety and conformity).

Prior to the questionnaires' application, permissions were asked to General Direction for Innovation and Curricular Development (DGIDC) from the Ministry of Science and Education (for schools) as well as to the National Committee for Data Protection (CNPD). Afterwards, each school was consulted and agreed to participate in the study. Parents were then asked to give their informed consent to allow their children to participate in the study, and were also requested to answer to a sociodemographic questionnaire and to Achenbach's Child Behaviour Checklist. All participants were assured of the confidentiality and anonymity of their answers. The measures were applied collectively in classroom settings.

RESULTS

In order to test our three first hypothesis, we performed Independent Samples T Tests using IBM SPSS Statistics 20. Results are shown in tables 3. to 5. and discussed below.

Table 3. Gender differences in antisocial tendencies

Gender	Behaviour	Mean	Std.Dev.	Mean dif.	t	P
Male	CBCL opposition/immaturity	4,58	4,517	,598	1,480	,140
Female		3,98	3,906			
Male	CBCL aggressive behaviour	2,02	2,386	,984	4,888	,000
Female		1,03	1,682			
Male	YSR antisocial	3,17	3,301	1,302	4,800	,000
Female		1,87	2,164			

Our first hypothesis is confirmed since, as shown in table 2., boys scored higher than girls in all the analyzed variables and this difference was statistically significant in two of the three behavioural dimensions analyzed, that is, in aggressive behaviour (reported by parents), and in the self-reported antisocial scale.

PERSONALITY AND GENDER: WHAT DO THEY TELL US ABOUT ADOLESCENT ANTISOCIAL BEHAVIOUR?

Table 4. Gender differences in personality

Gender	Personality	Mean	Std.Dev.	Mean dif.	t	P
Male	EPQ-J psychoticism	2,91	3,139	,932	3,568	,000
Female		1,98	2,256			
Male	EPQ-J extraversion	16,35	2,879	,925	3,395	,001
Female		15,42	3,042			
Male	EPQ-J neuroticism	9,33	5,784	-1,349	-2,551	,011
Female		10,68	5,611			
Male	EPQ-J lie	8,99	4,242	-,573	-1,490	,137
Female		9,57	4,015			

The second hypothesis is also confirmed. In fact, table 3. shows the existence of significant differences between boys and girls in all the three personality traits as defined by Eysenck and discussed above. Boys scored significantly higher in psychoticism and extraversion, whereas girls presented higher scores in neuroticism.

Table 5. Personality differences according to antisocial tendencies *

Behaviour	Personality	Mean	Std.Dev.	Mean dif.	T	P
YSR antisocial	EPQ-J psychoticism	5,51	3,650	3,606	7,279	,000
YSR N.antisocial		1,90	2,214			
YSR antisocial	EPQ-J extraversion	16,49	2,292	,772	2,277	,025
YSR N.antisocial		15,72	3,090			
YSR antisocial	EPQ-J neuroticism	14,30	4,902	5,752	6,747	,000
N.antisocial		9,55	5,596			
YSR antisocial	EPQ-J lie	5,91	3,491	-3,895	-7,773	,000
YSR N.antisocial		9,81	3,964			
CBCL opp./immat.	EPQ-J psychoticism	3,01	3,044	,823	2,109	,038
CBCL N.opp./immat.		2,19	2,535			
CBCL opp./immat.	EPQ-J extraversion	16,53	2,422	,868	2,623	,010
CBCL N.opp./immat.		15,66	3,056			
CBCL opp./immat.	EPQ-J neuroticism	11,29	5,741	1,391	1,849	,068
CBCL N.opp./immat.		9,90	5,712			
CBCL opp./immat.	EPQ-J lie	7,78	3,935	-1,852	-3,567	,001
CBCL N.opp./immat.		9,63	4,103			
CBCL aggressive	EPQ-J psychoticism	4,30	3,635	2,262	4,570	,000
CBCL N.aggressive		2,04	2,332			
CBCL aggressive	EPQ-J extraversion	16,56	2,726	,881	2,258	,027
CBCL N.aggressive		15,68	3,007			
CBCL aggressive	EPQ-J neuroticism	10,70	5,372	,680	,887	,378
CBCL N.aggressive		10,02	5,780			
CBCL aggressive	EPQ-J lie	7,75	4,409	-1,832	-2,969	,004
CBCL N.aggressive		9,59	4,042			

Regarding the third hypothesis, we found significant personality differences between individuals according to their antisocial tendencies, as presented in table 4., thus, confirming our assumption. In fact, there are personality differences between individuals with low and average scores and those with high scores (at least, one standard deviation above the mean score). When YSR's antisocial (self-reported) scores were used to distinguish between higher and lower antisocial individuals, there were significant differences in all the personality dimensions, whereas, when we used CBCL's scores (reported by parents), the neuroticism scale was the only one not to show significant differences.

Table 6. Multiple linear regression model

Dependent V.	Independent V.	R	Adj. R ²	F	P	Beta Std.	P
CBCL opposition/ immaturity	psychoticism	,265	,062	8,772	,000	,184	,000
	extraversion					,079	,079
	neuroticism					,063	,217
	Lie					-,049	,344
CBCL aggressive behaviour	psychoticism	,322	,096	13,448	,000	,288	,000
	extraversion					,108	,016
	neuroticism					-,050	,316
	Lie					-,050	,323
YSR antisocial	psychoticism	,644	,410	83,827	,000	,394	,000
	extraversion					,053	,139
	neuroticism					,062	,125
	Lie					-,324	,000

Unlike the former, our fourth hypothesis was not fully confirmed, since only psychoticism predicted all the analyzed behavioural dimensions. Indeed, in both behavioural dimensions reported by the parents, only psychoticism showed significant results, in models explaining 6,2% and 9,6% of the variance. The self-reported antisocial dimension was significantly predicted by psychoticism and lie, in a model explaining 41% of the variance.

CONCLUSIONS

Results from this research confirm the existence of gender differences on both personality and antisocial behaviours. As expected, boys manifested greater tendency for antisocial behaviours when compared to girls. In addition, boys scored higher on psychoticism and extraversion, thus showing, on average, a greater tendency for aggressiveness, egocentrism, toughness, and impulsivity, along with higher energy, sociability, stimulation seeking, activity, and assertiveness. On the other hand, girls presented higher neuroticism scores, that is, more susceptibility to anxiety and quick emotional arouse.

Likewise, there were also significant differences on most of the personality traits between lower and higher antisocial adolescents, confirming the importance of psychoticism, extraversion, and also of the conformity to social rules and expectations to understand antisocial behaviour.

Finally, our results point out to the possibility that boys, due to their tendency to show higher psychoticism, may be more prone to antisocial manifestations than girls, since this personality trait – often related with impulsivity, as mentioned above – was the only significant predictor found for antisocial behaviour.

In sum, this study shows that psychoticism may be a mediator of the relation between gender and antisocial behaviour in adolescence, in the sense that the significant gender differences regarding antisocial tendencies can be related to the significant personality differences between boys and girls. In other words, significant gender differences regarding psychoticism are possibly the reason why boys – who score significantly higher in this trait – are more prone to engage in antisocial conducts, at least during this developmental stage. In fact, as mentioned before, impulsivity tends to decline from adolescence to adulthood, as there may be some changes over time in some personality traits, during adolescence/early adulthood that reflect normative changes in psychosocial development. Therefore, it would be interesting to replicate this study, with a longitudinal design, assessing individuals during adolescence and later in early adulthood to verify if, in a different developmental stage, the same results are found between gender, personality, and antisocial tendencies.

There are some limitations to this study, as the existence of psychological and developmental deficits was not assessed, as well as drug and alcohol consumption. This conditions could have had some effect on both behavioural and personality dimensions, and the lack of control can potentially limit our conclusions. Furthermore, the sample was not random, since we were dependent on parents' permission for participation, which may also bring some restrictions to the generalization of results to the population. Nevertheless, the large size of our sample and the combination of self-reports and parents' reports regarding behavioural dimensions

PERSONALITY AND GENDER: WHAT DO THEY TELL US ABOUT ADOLESCENT ANTISOCIAL BEHAVIOUR?

offers some confidence on the gathered data and its validity. It is our belief that this study brings important conclusions to the study of the antisocial phenomenon in adolescence, especially regarding what is behind the well acknowledged gender differences on antisocial tendencies, stressing the importance of psychoticism on male adolescent antisocial behaviour.

REFERENCES

- Baumann, A. A., & Odum, A. L. (2012). Impulsivity, risk taking, and timing. *Behavioural Processes*, 90(3), 408-414. doi: 10.1016/j.beproc.2012.04.005
- Bennett, S., Farrington, D. P., & Huesmann, L. R. (2005). Explaining gender differences in crime and violence: The importance of social cognitive skills. *Aggression and Violent Behavior*, 10, 263-288. doi: 10.1016/j.avb.2004.07.001
- Berkout, O. V., Young, J. N., & Gross, A. M. (2011). Mean girls and bad boys: Recent research on gender differences in conduct disorder. *Aggression and Violent Behavior*, 16, 503-511. doi: 10.1016/j.avb.2011.06.001
- Blonigen, D. M. (2010). Explaining the relationship between age and crime: Contributions from the developmental literature on personality. *Clinical Psychology Review*, 30, 89-100. doi: 10.1016/j.cpr.2009.10.001
- Blonigen, D. M., Littlefield, A. K., Hicks, B. M., & Sher, K. J. (2010). Course of antisocial behavior during emerging adulthood: Developmental differences in personality. *Journal of Research in Personality*, 44, 729-733. doi: 10.1016/j.jrp.2010.08.008
- Cale, E. M. (2006). A quantitative review of the relations between the "Big 3" higher order personality dimensions and antisocial behavior. *Journal of Research in Personality*, 40, 250-284. doi: 10.1016/j.jrp.2005.01.001
- Carrasco, M., Barker, E. D., Tremblay, R. E., & Vitaro, F. (2006). Eysenck's personality dimensions as predictors of male adolescent trajectories of physical aggression, theft and vandalism. *Personality and Individual Differences*, 41, 1309-1320. doi: 10.1016/j.paid.2006.05.005
- Caspi, A. (2000). The child is the father of the man: Personality continuities from childhood to adulthood. *Journal of Personality and Social Psychology*, 78(1), 158-172. doi: 10.1037//0022-3514.78.1.158
- Center, D. B., & Kemp, D. E. (2002). Anti-social behaviour in children and Eysenck's theory of personality: An evaluation. *International Journal of Disability, Development and Education*, 49(4), 353-366. doi: 10.1080/1034912022000028330
- Colder, C. R. et al. (2011). Revised reinforcement sensitivity theory and laboratory assessment of BIS and BAS in children. *Journal of Research in Personality*, 45, 198-207. doi:10.1016/j.jrp.2011.01.005
- DeLisi, M., & Vaughn, M. G. (2008). The Gottfredson-Hirschi critiques revisited: Reconciling self-control theory, criminal careers, and career criminals. *International Journal of Offender Therapy and Comparative Criminology*, 52, 520-537. doi: 10.1177/0306624X07308553
- Dodge, K. A., Coie, J. D., & Lynam, D. (2008). Aggression and antisocial behavior in youth. In W. Damon, & R. M. Lerner, *Child and adolescent development: An advanced course* (pp.437-472). Hoboken, N.J.: Wiley.
- Eysenck, H. J., & Eysenck, M. W. (1985). *Personality and individual differences: A natural science approach*. New York : Plenum Press.
- Farrington, D. P. (2004). O estudo do desenvolvimento da delinquência de Cambridge: Principais resultados dos primeiros 40 anos. In A. C. Fonseca (Ed.), *Comportamento anti social e crime: Da infância à idade adulta* (pp. 73-132). Coimbra: Almedina.
- Fergusson, D. M., & Horwood, L. J. (2002). Male and female offending trajectories. *Development and Psychopathology*, 14, 159-177.

- Fonseca, A. C., & Simões, A. (2002). A teoria geral do crime de Gottfredson e Hirschi: O papel do autocontrolo, da família e das oportunidades. In A. C. Fonseca (Ed.), *Comportamento anti-social e família: Uma abordagem científica* (pp. 245-267). Coimbra: Almedina.
- Lahey, B. B., et al. (2006). Testing descriptive hypotheses regarding sex differences in the development of conduct problems and delinquency. *Journal of Abnormal Child Psychology*, 34, 737-755. doi: 10.1007/s10802-006-9064-5
- Lima, M. P. (Ed.) (1997). NEO-PI-R: Contextos teóricos e psicométricos. «OCEAN» ou «iceberg»? Dissertação de Doutoramento, Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra, Coimbra.
- Luna, A. B. (2010). A maturação do controlo cognitivo e o cérebro adolescente. In A. C. Fonseca (Ed.), *Crianças e adolescentes: Uma abordagem multidisciplinar* (pp. 331-369). Coimbra: Almedina
- McEachern, A. D., & Snyder, J. (2012). The relationship of impulsivity-inattention and verbal ability to overt and covert antisocial behaviors in children. *Journal of Youth and Adolescence*, 41(8), 984-994. doi: 10.1007/s10964-011-9710-2
- Moffitt, T. E. (2006). A review of research on the taxonomy of life-course persistent versus adolescence-limited antisocial behavior. In F. T. Cullen, J. P. Wright, & K. R. Blevins, *Taking stock: the status of criminological theory*. (pp. 277-311). New Brunswick, N.J.: Transaction Publishers.
- Moffitt, T. E., & Caspi, A. (2001). Childhood predictors differentiate life-course persistent and adolescence-limited antisocial pathways among males and females. *Development and Psychopathology*, 13, 355-375.
- Robins, R. W., Caspi, A., & Moffitt, T. E. (2002). It's not just who you're with, it's who you are: Personality and relationship experiences across multiple relationships. *Journal of Personality*, 70(6), 925-964. doi: 10.1111/1467-6494.05028
- Romer, D., Duckworth, A., Sznitman, S., & Park, S. (2010). Can adolescents learn self-control? Delay of gratification in the development of control over risk taking. *Prevention Science*, 11, 319-330. doi: 10.1007/s11121-010-0171-8
- Romer, D., et al. (2009). Executive cognitive functions and impulsivity as correlates of risk taking and problem behavior in preadolescents. *Neuropsychologia*, 47, 2916-2926. doi: 10.1016/j.neuropsychologia.2009.06.019
- Romero, E. Luengo, M. A., & Sobral, J. (2001). Personality and antisocial behaviour study of temperamental dimensions. *Personality and Individual Differences*, 31, 329-348. doi: 10.1016/S0191-8869(00)00139-2
- Shiner, R. L., & Caspi, A. (2008). Personality development. In W. Damon, & R. M. Lerner, *Child and adolescent development: An advanced course* (pp. 181-215). Hoboken, N.J.: Wiley.
- Steinberg, L. et al. (2009). Age differences in future orientation and delay discounting. *Child Development*, 80(1), 28-44. doi: 10.1111/j.1467-8624.2008.01244.x
- Tremblay, R. E. (2010). Developmental origins of disruptive behaviour problems: The 'original sin' hypothesis, epigenetics and their consequences for prevention. *Journal of Child Psychology and Psychiatry*, 51(4), 341-367. doi: 10.1111/j.1469-7610.2010.02211.x