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READINESS TO RESIST AND ITS RELATIONSHIP WITH CREATIVITY

INTRODUCTION

Rebellion, resistance and reactance are terms which describe an individual response to perceived or anticipated frustration of autonomy. Autonomy is regarded as a creative potential (Runco, 2007, pp.288-289). Resistance towards persons or objects may result from a threatened sense of autonomy. Attempts at countering the threat lead to the search for alternative ways to fulfill of individual aspirations. These projects can take unconventional forms and depend on the individual person. Moreover, resistance is associated with independence, which is a key feature attributed to creative people (cf. Dowd et al., 1994). For these reasons, many authors imply a direct relationship between resistance, nonconformity and creativity (Apter, 1982; Griffin & McDermott, 1997; Kim, 2010; Madjar, Greenberg & Zheng, 2011; Runco, 2007) and focus on the period of adolescence. The interest in adolescence stems from the fact that during this period resistance is manifested more directly. What is more resistance more often manifests creative properties as well as emancipatory aspects also in the social dimension (cf. Aggleton & Whyty, 1985; Arnow et al., 2003; Balwick & Macrides, 1975; Cowan & Presbury, 2000; Dowd & Sanders, 1994; McDermott, 1988; 2001; Steiner & Marshall, 1995). It is also worth noting that resistance measured as reactance is related to the results obtained in the Openness scale. The scale is part of the NEO P-R personality questionnaire and measures the personality traits described as readiness to try new experiences and positive rating of novelty (Seemann et al., 2005). Some authors emphasize that the relationship between creativity and resistance depends on birth order and gender (Hertwig, Davis & Sulloway, 2002; Sulloway, 1998). They argue that people born as the second children are more nonconformist and creative, because they occupy a specific place in their family due to this position. However, scientists are not unanimous on this issue – some argue that firstborn children are more creative and rebellious (Baer, Oldham, Hollingshead & Jacobsohn, 2005), while other claim that the relationship between birth order, resistance and creativity is determined by other much more significant variables such as socioeconomic status, family size, gender, age and number of siblings. In the face of these variables the importance of birth order is not as large (Baer, Oldham, Hollingshead & Jacobsohn, 2005; Boling, Boling & Eisenman, 1993; Ernst & Angst, 1983; Zweigenhaft & Ammon, 2000).

It would be reasonable to underline the direct role of gender and sex as factors differentiating the level of creativity (Abra, 1991; Baer, Oldham, Hollingshead & Jacobsohn, 2005), and the level of resistance, autonomy and assertiveness (Sulloway, 1998; Abra, 1991; Hong, 1990; Hong et al., 1994; Joubert, 1990; Seeman et al., 2004). It should be noted, however, that there is data highlighting the importance of other variables which accompany the differentiation of gender in resistance and creativity. These include: the type of tasks performed by a person, different expectations and permissions for boys and for girls, differences in hormonal and neurophysiologic conditions (Abra, 1991; Ai, 1999), gender segregation

(Negray & Rausch, 2009) and the level of education which interacts with gender (Pilar & Grande, 2007).

Resistance is usually associated with expressing anger, aggression, defiance, resentment or courage. Therefore resistance is usually identified with patterns of male reactions rather than female (cf. Ames & Flynn, 2007; Delury, 1979). Hence, it is assumed that conformism is much more typical for women. However, with regard to readiness to resist men and women do not have to be as different as much as it would seem, especially when we treat resistance as a multivariate phenomenon, which is disclosed in different forms. It is probably more adequate to state that men and women differ in terms of these forms.

The frame of the relationship between sex and resistance can be expanded when we take a broader perspective on that latter phenomenon, for instance by taking into account such forms of opposition as seeking confrontation, ingratiation or avoidance. So conceptualized resistance may also look differently in the relationship with creativity. Moreover, from the standpoint of this expanded conceptualization, it would be interesting to study the association between resistance and birth order.

The research presented below was based on two hypotheses: (1) There is a connection between the readiness to resist and creativity, (2) The level of creativity and the level of resistance differ with regard to sex and birth order. More detailed hypotheses were not formulated due to different and often contrary results obtained by others authors. It seems more encouraging, therefore, to consider the shape of the relationship between these variables in a Polish group of late adolescents. The most likely results of the study should indicate a generally higher intensity of resistance in the case of men than in the case of women.

METHOD

Procedure. The study involved 207 undergraduates. Random sampling was used. The sample units were groups of students who earlier received their weekly class schedules. After coming to select groups the researcher ask the students to take part in a study the aim of which was to diagnose the relationship between creativity and reacting to restriction of freedom. Participation in the survey was voluntary, anonymous and was not subject to time pressed. Each respondent who agreed to participate received a set of questionnaires to complete. However, due to incomplete information the final analysis of the data was conducted on 197 individuals (123 women and 74 men). The age of the participants ranged from 19 to 23 years ($M = 20.80$, $SD = 0.93$). The participants included 90 first-born, 61 second-born and 46 individuals born as the third and later child. Birth order and sex were determined by direct answer on the questionnaire sheet.

Measures. The Questionnaire of Readiness to Resist (Pasikowski, 2012) devised by the author, is a the tool based on a multidimensional model of resistance, with the underlying assumption that reactions to social impact may take various forms, from submission to assertive or even aggressive responses. The questionnaire consists of four scales which measure various forms of resistance. These scales have been extracted through factor analysis. The reliability of the scales is in the range of 0.73-0.82 according to Cronbach's alpha. The first scale consists of 6 items which measure retribution (R) as an aspect of resistance. Retribution means expressing anger and resentment, taking action contrary or detrimental to the interests of those exerting pressure or influence. The second scale also consists of 6 items and measures assertive confrontation (Ac) as the next aspect of resistance. Assertive confrontation is expressed by direct statements concerning one's position and by searching for argument in order to change a situation of limitation while at the same time respecting the rights of other people. The third scale relates to creating the impression of submissiveness, while secretly pursuing one's own goals and minimizing potential losses caused by open defiance. This scale

consists of 5 items and is called opportunism (O). The fourth scale is designed to measure the readiness to resist in a passive way and is made up of 3 test items. It is called avoidance (Av). The content of all items in the questionnaire describes concrete behaviors in response to external demands and pressures. Possible responses were provided on a seven-point frequency scale. One extreme of the scale was described as "never" and the other extreme as "almost always". The questionnaire was administered in four stages in order to assess its psychometric properties. Overall 553 undergraduates and graduates took a part in the questionnaire study. Validity and the reliability were confirmed.

The Creativity Checklist proposed by M. Griffin and M.R. McDermott (1998) is designed to measure creativity. This instrument was based on the statement made by D. Hooever (1981) that in determining the level of creativity of individual people we should refer to the total number of their creative actions and the self-report is relatively the best way to obtain information about creativity. The checklist consists of two sections. The first part is used to measure creative interests undertaken during the previous year. The second part is to measure creative activities also undertaken during the previous year. D. Hooever claimed that creativity must be analyzed in two aspects: being creative (participating in creative activities) and having an interest in creative acts. Each part of the Creativity Checklist consists of four subscales. The first refers to visual arts (for example painting or photography). The second refers to performing arts such as drama, dancing, playing musical instruments. The third concerns literary arts (writings, either in words or in music, such as poetry, prose and the like). The last subscale relates to domestic arts like making clothes, space design, interior decorations and gardening. Measurement results are obtained for separate subscales and overall. Before the Creativity Checklist was used in the presented research it was modified by the addition of the "creating computer graphics" subscale to the literary arts scale and the "writing computer programs" subscale to the literary arts scale. In addition, the old scale of measurement in the first section was changed from a three-level to a four-level scale of intensity (none, slightly, moderately, very), and in the second section from a three-level to a four-level scale of frequency (never, rarely, sometimes, often). These procedures were designed to complement the scales by taking into account contemporary forms of creative activity using computers and also to improve collected data.

The authors of the Creativity Checklist did not present the results of reliability analysis, however, during modification the tool reliability was observed. During the administration of the tool, one hundred undergraduates (60 females, 38 males, 2 unknown) from stationary and extramural studies, were tested with a new version of the Creativity Checklist. In the case of creative interests scales Cronbach's alpha ranged from 0.72 to 0.82. But only one subscale of creative activities was above 0.70 - "domestic arts". Other subscales did not achieve this level but also did not fall below 0.60. In spite of this it was decided that the new version of the Creativity Checklist would be used, bearing in mind that the results of measurement using the latter scales should be interpreted with special caution.

RESULTS

First an analysis of correlation was performed in order to find answers to the question concerning the relationship between creativity and readiness to resist. It was found that creative interests and creative activities are connected with the readiness for assertive confrontation (Ac) but not in a very strong way. It means that a higher Ac level corresponds with a higher level of creativity. It must be stressed that the reliability of subscales of creative activities, such as visual arts (A.v.a.), performing arts (A.p.a.) and writing (A.w.) was not too high. Hence, the results in scope of the subscales cannot be as certain as the other results. It is worth

findings that scores of the other scales of readiness to resist were associated with creativity. The results are shown in Table 1.

Table 1: The relationship between readinesses to resist a creativity

	I.v.a.	I.p.a.	I.w.	I.d.a.	A.v.a.	A.p.a.	A.w.	A.d.a.	total I.	total A.
R	.06	.12	.05	.03	.07	.06	.01	-.05	.09	.03
Ac	.19**	.17*	.23***	.16*	.17*	.13	.23***	.13	.25***	.23***
Av	-.07	.10	.05	.03	-.04	.14	-.04	.00	.04	.01
O	-.03	.03	-.01	-.11	-.02	.04	.00	-.11	-.04	-.04

I = creative interest, A = creative acts, v.a. = visual arts, p.a. = performing arts, w. = writing 'words', music, and the like, d.a. = domestic arts
 * $p < .05$ ** $p < .01$ *** $p < .005$ **** $p < .001$

The next stage was an analysis of variance (MANOVA) based on the following pattern: sex (man, woman) x birth order (first, second, further). The results revealed that sex was the main factor influencing creativity scores (Wilks' lambda = .94, $F(8,184) = 5.54$, $p < .0001$; $\eta^2 = .19$). This means that birth order had no influence on the differentiation of creativity. Women displayed a higher intensity of creative interests and creative activity. Detailed results are presented in Table 2.

Table 2: Differences between men and women in terms of creativity

	Women		Men		F(1,195)
	M	SD	M	SD	
I.v.a.	6.30	4.37	5.38	3.61	2.33
I.p.a.	6.22	5.30	4.69	4.75	4.15*
I.w.	4.59	4.78	4.31	4.08	0.17
I.d.a.	6.37	3.88	3.15	2.75	39.18*****
A.v.a.	5.28	3.33	4.92	3.06	0.56
A.p.a.	3.08	2.58	2.81	3.06	0.44
A.w.	3.07	3.28	3.04	3.19	0.00
A.d.a.	4.67	3.48	2.84	3.10	13.96*****
total I.	23.48	14.02	17.53	11.01	9.72***
total A.	16.11	8.95	13.61	8.85	3.63^

An analysis of variance of resistance scores was also performed (sex x birth order). The main influence factor was sex (Wilks' lambda = .81, $F(4,188) = 2.78$, $p = .028$, $\eta^2 = .06$) and at the level an effect of the interaction between sex and birth order ($F(8,376) = 1.79$, $p = .077$, $\eta^2 = .04$) was observed.

With regard to the main effect of gender one-dimensional analysis of variance (ANOVA) showed differences between men and women in Ac- and O-scores. Males proved displayed lower intensity in Ac and higher in O than females. Moreover, differences occurred between men and women in terms of R, but only at a statistical trend level. Men proved dominant in this scope. Detailed results are presented in Table 3.

Table 3: Differences between men and women in terms of readiness to resist

	Women		Men		F(1,195)
	M	SD	M	SD	
R	16.98	8.19	19.35	8.80	3.65^
Ac	37.57	7.16	35.59	5.94	3.98*
Av	16.01	5.85	16.53	5.57	0.38
O	18.78	6.41	22.07	6.71	11.74*****

^ $p = .058$ * $p < .05$ **** $p < .001$

Birth order did not provide the main effect, although one-dimensional analysis indicated a trend toward statistical significance. There were differences in terms of Av ($F(2,194) = 2.40$, $p = .093$) and O ($F(2,194) = 2.98$, $p = .053$). First-borns displayed lower intensity in Av ($M = 15.50$, $SD = 5.40$) than those born as second children ($M = 17.51$, $SD = 6.18$). Participants born as the third and later children showed a lower intensity in O ($M = 17.98$, $SD = 6.38$) than the first-born ($M = 20.89$, $SD = 6.66$) or the second-born children ($M = 20.28$, $SD = 6.77$).

Interaction between gender and birth order occurred in one-dimensional analysis, in the case of Av-scores ($F(2,194) = 3.91$, $p < .05$) and O-scores ($F(2,194) = 4.23$, $p < .05$). The second-born women had a similar level of avoidance (Av) ($M = 18.62$, $SD = 5.91$) to that of the first-born men ($M = 16.59$, $SD = 5.03$) and the men who were born as the third or later children ($M = 17.91$, $SD = 5.87$), but different from the second-born males ($M = 15.79$, $SD = 6.33$). The last result did not reach the threshold of statistical significance ($p = .056$). In addition, the second-born women exhibited a higher intensity of this variable than the women who were born first ($M = 14.63$, $SD = 5.57$) and the women born as the third or later children ($M = 15.26$, $SD = 5.43$). Males did not differ within their gender group. These results are presented in Figure 1.

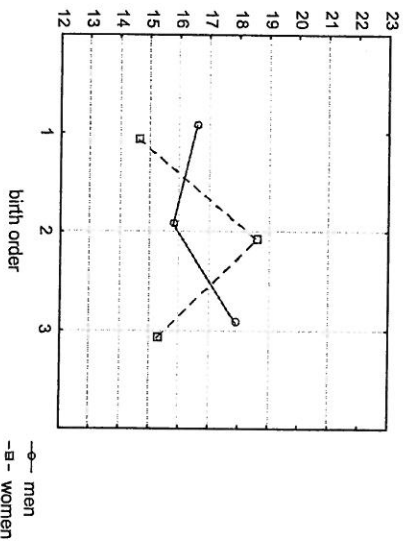


Figure 1. The interaction of gender and birth order in determining the level of avoidance (Av)

In the case of O it was the opposite. Here the males displayed higher results than females. Only the second-born men ($M = 19.67$, $SD = 7.87$) and the second-born women ($M = 20.68$, $SD = 6.04$) showed similarity. It is particularly interesting in the context of the above

data, indicating the lack of differences between groups which were distinguished merely by gender. As for the simple effects, the second-born males proved to be less opportunistic than the first-born males ($M = 23.74$, $SD = 5.93$), while the second-born women were more opportunistic than the women born as the third or later children ($M = 16.91$, $SD = 6.41$). Other inter-group comparisons revealed no statistically significant differences. These results are illustrated in Figure 2.

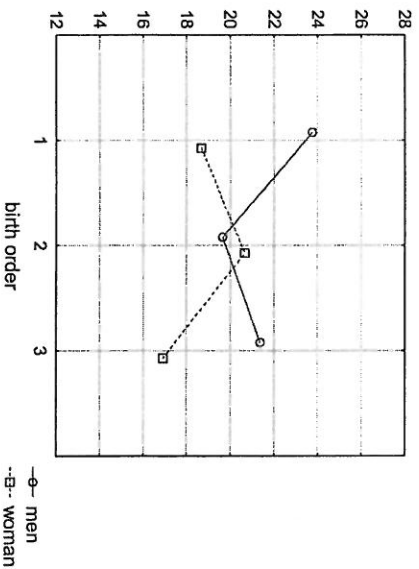


Figure 2. The interaction between gender and birth order in determining the level of opportunism (O)

DISCUSSION

First of all, the results have shown that the relationship between creativity and resistance is not a simple one. Relying on the used tools we can say that in spite of some author's expectations the variables are not firmly connected. Relationship exists only between creativity and the assertive aspect of readiness to resist. This result might indicate the main role of linguistic and communication skills in the connection of the variables. The ability to verbalize may be the basis for performance of mental operations onto real objects. It may also be engaged to communicate attitudes and emotions, without resorting to less socially acceptable forms of expressing disagreement with restrictions. Particularly interesting in this regard is the lack of relationship with retribution (R). It is worth noting that retribution represents the closest equivalent to the properties measured by questionnaires concerning negativity and reatance (cf. Donnell, Thomas & Baboltz, 2001; Dowd, Milne & Wise, 1991; McDermott, 1988). Of course the results may be mediated by the properties of the tools used in the study.

When it comes to the predominance of women over men in terms of creativity, the result was especially visible in relations to the scales which measure domestic arts and performing arts. The scales relate to activities which may be more associated with femininity, such as dance, painting, sculpture, fashion, clothing design - activities which are sometimes associated with greater sensitivity and aesthetic sense. The predominance of women is confirmed by independent observations (Abra, 1991), which demonstrate the domination of women in terms of performing arts, choreography and literature, but not in music composition and science. Interestingly, the results of the presented research do not confirm the results of other investigations, where birth order was a factor differentiating the level of creativity. Some authors, however, obtained similar results (cf. Boling, Boling & Eisenman, 1993). Generally, the prob-

lem of gender differentiation in the context of creativity has not yet been finally resolved. For example, more recent research shows opposite results where males obtained higher scores in the verbal aspects of creativity (Lin, Hsu, Chen & Wang, 2011) or where the difference between males and females does not exist (Stolzflus, Nibbelink, Vredenburg & Thyrum, 2011). Naturally, this also depends on sample selection and the kind of tool used in the study.

Women's higher scores in the Ac scale can be explained by gender-differentiated language. Women use language intensively for the expression of inner emotions (Gawda, 2008; Maxon, 1991; Strassburger, 1998) and are considered to be more caring about relationships, more sensitive towards the feelings of their interlocutors and more conformist than men (Strayer & Roberts, 1997; Cotten-Huston, 1998). Thus, in situations of external pressure they can probably resist in an assertive way using verbal communication to a greater extent than men (Garaigordobil, 2009). In addition, some researches prove that, from their childhood, women care more about relationships (Lairicer & Baumann, 1992; Placek, Smith & Dodge, 1994), and this particular feature characterizes the readiness to resist in an assertive way (Ac).

The predominance of men in terms of opportunism may be associated with the conditions of socialization. This means that men are usually expected to be less expressive and more willing to accept efforts and discomfort. On the other hand, the predominance of men may be connected with a less extensive network of relationships. Contrary to men, expressing emotion in the case of women is more accepted and women generally have a more extensive network of social relationships and social support (Bokhorst, et al., 2010). Therefore, they can afford to display more direct opposition. When women behave in this way the consequences, in their form of possible loss of relationship can be compensated by others relationships.

The higher results of men in terms of resistance as retribution is not surprising. Numerous studies prove that men express direct hostility and aggression towards constraints and pressures more often than women. Moreover, this reaction is more expected of men (cf. Cotten-Huston, 1998; Davidson, 2003; MacGregor & Davidson, 2000).

In the case of birth order, lower intensity of Ac among the firstborns can be explained by the strategy of social functioning which they use, and which is based on the aspiration to dominate and to achieve (Sulloway, 1998).

The same method can be applied to interpret lower readiness to resist in an opportunistic manner (O) in the case of people born as the third or subsequent child. According to F.J. Sulloway (1998), subsequent children use strategies which are related to the expressing sociability, conformity and a tendency to cooperate.

As for the relationship between birth order and gender in shaping the results for resistance, in the case of second-born children, the results of women and men are different. The first comparison was made between women and men, and the second one was made within the same gender group, but between people born in a different order. Second-born women achieved similar scores in the Av scale in comparison to the first-born men, and men born as the third and later children. At the same time these women predominated over the second-born men. In the case of the O scale the results are opposite, with only second-born women and second-born men attaining the same levels in this variable, while first-born males predominate over first-born females, and men born as third children predominate over women born in the same order. This may be interpreted in the context of psychosocial functioning conditions. It is possible that these conditions are associated with one's position in the family. Moreover, they may interact with one's sex and in this way determine the set of features common for second children and gender. In light of this thesis we can claim that women born as second children display readiness to resist by avoidance (AV), and in comparison to other groups they manifest male pattern of such readiness. However, it does not mean that they become similar to males. It is rather a strengthening of gender characteristics - namely an intensification of the tendency to avoid situation of experiencing external pressure.

Similar interpretation can be applied to the decrease in the intensity of opportunism (O) in the case of second-born men and the increase of opportunism in the case of the second-born women. For men being the second child favors the reduction of indirect forms of opposition, while for women it fosters such forms. In fact women born as second children had a higher intensity of the Av and O scales than women of different birth order. It is worth noting that if sibling gender had been monitored during the study, the results of women could have been clearer.

After the analysis of the presented results the general conclusion which arises is that resistance and creativity are not determined by birth order alone, but rather by a combination of this variable with others such as gender. Sometimes gender turns out to be much more important in predicting resistance and creativity.

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SUMMARY

Adolescence is identified as a period of rebellion and resistance. These features correspond with changes and creativity. In own research two questions in relation to this age group were assumed. First whether the creativity of a person and his readiness to resist are related in this age group. Second, whether the level of readiness to resist and the level of creativity actually are changed depending on sex and birth order. The research was carried out on a group of 207 adolescents (19-23 years old) and these have provided predictable but also unexpected results.

STRESZCZENIE

Adolescencja jest urozamiana z okresem buntu i oporu. Te z kolei z dokonaniem zmian i kreatywnością. W prezentowanych badaniach postawione zostały dwa pytania, w odniesieniu do tej grupy wiekowej. Pierwsze, czy kreatywność osoby i gotowość do oporu są ze sobą związane w tej grupie wiekowej. Drugie, czy poziom gotowości do oporu oraz poziom kreatywności podlegają zmianom, w zależności od płci oraz kolejności urodzenia. Badanie zostało przeprowadzone na grupie 207 adolescentów (wiek 19-23 lat) i dostarczyło przewidywalne lecz także zaskakujące wyniki.

SAMMENDRAG

Ungdomsalderen er kjent som en periode med opprør og motstand. Disse særegenhetene samsvarer med endringer og kreativitet. I egen forskning er det to spørsmål som ble undersøkt i forhold til denne aldersgruppen. Det første er om en persons kreativitet og vilje til motstand karakteriserer denne aldersgruppen. Det andre er om vilje til motstand og kreativitet endrer seg med kjønn og fødselsrekke. Forskingen blir gjennomført med en gruppe på 207 ungdommer (19-23 år) og har ført til både forventede og uventede resultater.