From creativity to future: the role of career adaptability

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Abstract.
The present study aimed to explore the effect of positive and negative creativity on the career construction process during adolescence. Since creativity has been conceptualized as a useful resource for identity construction, we tested the influence of creativity on future orientation, assessing the role of career adaptability. 338 high school students participated to the study. Structural equation model showed gender differences since hypothesized relations were only found significant in females. Results highlight a different function of positive creativity in Italian boys and girls. The use of creativity in career counseling for adolescents, through technological tools, is discussed.

Keywords: Creativity, Future, Career Adaptability.

1 Introduction

Creativity and Life Tasks in adolescence

Creativity is one of the key resources people can differently count on in order to resolve tasks of many types (including everyday challenges as well as life choices or developmental tasks) [1]. The process of defining one's self-identity has been, by some approaches [2,3], interpreted as an act of creativity. According to these, shaping one's self, and consequently his desires, goals and life projects which are in line with this idea of self, would be an effect of the creativity one can count on. The choice of a profession and creation of a life project is a major life task which, because of the characteristics of contemporary careers, continues to be questioned for the whole life course [4]. Nevertheless, it is during adolescence that this task begins to be particularly important and assumes a central position, because it allows the teenagers to access to future realistic representations of self. During this phase, activities and dimensions involved in creativity processes help the individual to deal with many psychological and social challenges related to identity construction [1]. First of all, creativity can help the adolescent explore new alternative ways of being and can help him originally mix and integrate heterogenous characteristics about self. Moreover, engaging in creative activities can provide positive identity contents for the kid and helps him experiencing life satisfaction and self-expression. This can work as a strong basis for self-esteem [5] and self-efficacy [6,7,8]. For all of those reasons it has been suggested that career counseling

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and life design interventions may, aiming to help the individual constructing a future plan, intervene through creative techniques. At the same time, interventions should promote creativity as a resource of the individual and get him able to use it for defining one's vocational identity, and therefore develop a positive future orientation [9]. Studies have shown how creativity, in educational contexts can be stimulated using technology and web-based practices [10,11] and it could be useful for career intervention to apply similar methods. Creativity has been found linked to career adaptability [12], the possibility for the individual to manage change through different skills, and it has been found that low levels of creativity were associated to career-indecision [13]. Kids with high level of creativity can more easily find their way to adapt to the job market and to make plans for life. For all of these reasons, it is reasonable to think that creativity in adolescence may be an important element for the construction of career projects and for future orientation.

Positive and negative creativity

As we can see, the role of creativity as a resource for personal development has been widely explored by previous researches. Nonetheless, in the last years, some attention was given to what has been called "Negative Creativity", the use of creativity which, differently from the traditional "Positive Creativity", includes the intention to reach negative goals (like cheating, deceiving, tricking, etc.), which can harm others, but not deliberately [14,15]. Even if negative creativity is associated to lesser integrity [16], it has been thought that positive and negative creativity can lead to both positive and negative outcome. During adolescence, negative and positive creativity can be both used by the individual in order to explore its context and find new way to express himself.

2 Current Study

The current study aimed to verify the relation between positive and negative creativity and future orientation in Italian adolescents. Precisely we hypothesized that positive and negative creativity, as useful resources for resolving identity construction and other developmental tasks, could be predictors of future orientation during adolescence. We also imagined that career adaptability, since it is an antecedent of career choices and life design, and has a direct link with creativity, could play a mediating role between creativity and future orientation. Some minor differences in creativity dimensions or domains was sometimes found in previous studies [3,17]. For this reason, this study also aimed to explore gender differences in negative and positive creativity and in relations between creativity, career adaptability and future orientation. Results could help us think about creative strategies and methods, also based on digital technologies, designed to support, stimulating teenagers' creativity itself, their career construction process.

3 Methods

3.1 Participants

The sample consisted of 338 adolescents (133 males; 205 females), aged 18-20 years (M_{age} = 18.85; SD_{age} = .51) attending the last year of various high schools in a large Italian city (Naples). The data collection was carried out in the classroom in the presence of the first author. Completion time was between 20 and 40 minutes. Only students volunteering to take part were involved in the research; of the total number of respondents, 90% took part in the research. Students were asked to read the instructions of the questionnaire before beginning self-evaluation.

3.2 Measures

Creativity Measures [14]. The CM was used to assess positive-creativity, negative-creativity and neutral-creativity. It presented 15 situations with three choices for each item. For this study, we only used positive-creativity, negative-creativity. The Italian version of this tool, which has been used in the current study, is in course of validation.

Design My Future [18]. The DMF was used to assess resilience and future orientation. For this study, we used only future orientation scale, of 11-items. The participants were asked to rate on a 5 point-scale from 1 (=not at all) to 5 (=very well). For this study, Cronbach's alpha was .90.

Career Adapt-Abilities Scale [19] The CAAS was used to assess career adaptability of adolescents. For this research, the Italian-validated version [20], consists of 24-items, was used. The participants were asked to rate on a 5 point-scale from 1 (=not strong) to 5 (=strongest). The scale assesses four dimensions: concern (6-items), control, (6-items) curiosity (6-items), and confidence (6-items). For this study, Cronbach's alpha for the four subscales were .86, .78, .79, and .84.

3.3 Data Analysis

Means and standard deviations were performed (Table **1**). Preliminary analyses of variance (ANOVAs) were also run in IBM SPSS 24 to verify whether gender differences would emerge in the dimensions considered. ANOVAs revealed a significant effect of gender on Positive Creativity [$F_{(1, 336)}$=7.995, p=.005, η^2=.023]; but not on Negative Creativity [$F_{(1, 336)}$=2.129, p=.145, η^2=.006]. These results confirm the importance of distinguishing gender when testing an overall model linking creativity, future orientation and career adaptability.

To test equivalence of the structural parameters across groups (male vs. female), two nested models were considered. A baseline model, in which parameters were freely estimated across groups, and a fully constrained model, in which the structural paths were constrained to be equal. The Satorra-Bentler chi-square difference test ($\Delta SB\chi^2$)

was used to test relative fit of nested models [21]. When the more constrained model was rejected, a less restrictive model of partial invariance was tested in which, in accordance with modification indices, equality constraints on one or more parameters were relaxed until the change in fit was no longer significant. In both models, the effects of positive creativity and negative creativity on career adaptability, positive creativity and negative creativity on future orientation, career adaptability on future orientation, and indirect effect on positive creativity and negative creativity on future orientation with mediating role of career adaptability were considered. The career adaptability (M) as a latent variable was tested within the structural equation model (SEM) and used. Precisely, we used the internal consistency approach [22] to form multiple observed indicators and created latent construct for career adaptability (concern, control, curiosity, and confidence), as already done in previous studies [23]. In our analysis, career adaptability shows an internal consistency and all standardized regression weights significant ($p< .001$). The models included correlations among CAAS dimensions. SEM models were run in Mplus 8.0 by using the maximum likelihood (ML) estimation.

4 Results

We conducted structural equation modeling tests to evaluate the conceptual model. Firstly, we tested the hypothesized model across male and female groups simultaneously without imposing any equality constraints. The baseline model produced a good fit to the data, $\chi^2_{(16)} = 39.025$, CFI= .97, TLI= .93, RMSEA= .092. The baseline model in the present study was not fully identical across groups. When the fit of the unconstrained model was compared to the fit of a fully constrained model in which all paths were held equivalent across the two groups, the Satorra-Bentler chi-square difference test that imposing the equality constraints resulted in a significantly worse model, $\chi^2_{(23)} = 38.031$, CFI= .98, TLI= .97, RMSEA= .062. Specifically, one regression coefficient differed across the two groups. Modification indices suggested that we could improve the model by releasing the constrained from positive creativity to career adaptability. The path from positive creativity to career adaptability was significant for female (β=.062, p=.013) but not for male. This path was released and the model was re-estimated, $\chi^2_{(22)} = 32.304$, CFI= .99, TLI= .98, RMSEA= .053. Lastly, we tested the nested structural model using the scaled difference χ^2 test, $\Delta SB\chi^2_{(6)} = 6.721$, p=.35 [24].

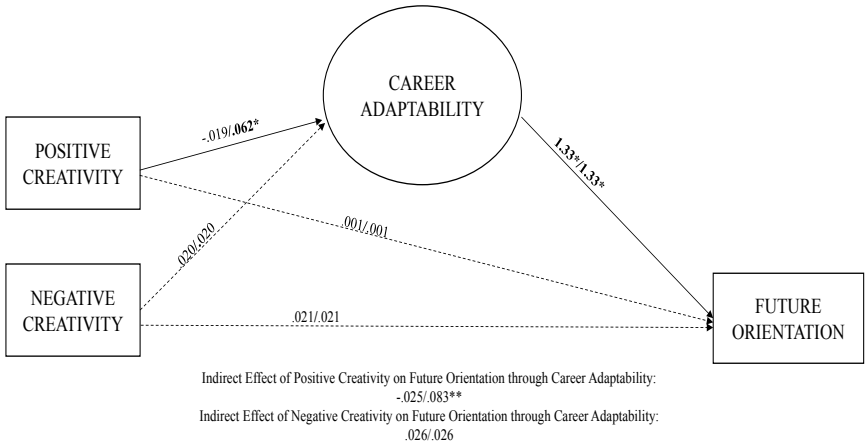
Thus, significant group differences exist in the conceptual model across male and female adolescent. The standardized regression path coefficients for groups are presented in Figure 1.

In female results show the significant effect of positive creativity on career adaptability, career adaptability on future orientation (β=1.33, p=.023). No significant direct effect of positive creativity on future orientation was found. Significant indirect effect of positive creativity on future orientation mediated by career adaptability resulted (β=.083, p=.010). In male results show only significant effect of career adaptability on future orientation (β=1.33, p=.023).

Table 1. Means and Standard Deviation for male and female subsample

	Male		**Female**	
	M	SD	M	SD
Positive Creativity	4.67	1.59	5.20	1.77
Negative Creativity	1.64	1.36	1.42	1.30
Future Orientation	3.84	.72	3.80	.76
CAAS_Concern	3.71	.70	3.66	.75
CAAS_Control	4.01	.61	4.04	.65
CAAS_Curiosity	3.87	.61	3.82	.66
CAAS_Confidence	4.07	.57	3.87	.67

Figure 1. Standardized regression path coefficients for the male and female subsamples



Note: Regression path coefficients for the males group are indicated before /, for the females group after /. Solid lines represent significant paths. All coefficients significant are indicated in bold. Non-standardized values are reported. * $p \leq .05$; ** $p \leq .01$

5 Discussion

Our study highlighted a different kind of use of creativity between male and female adolescents. While no gender differences were found in the use of negative creativity, analysis of variance showed that females reported higher scores than males in positive creativity. Apparently, Italian girls use classic creativity having positive intention, more

than boys. Gender differences were not only found in scores, but also in their links with the career construction processes of Italian boys and girls. In fact, the hypothesized effect of positive creativity on career adaptability only resulted in girls, while was not significant in boys. This result underlines a different function of positive creativity in Italian boys and girls. While in boys it seems to have no connection at all with the career construction process, in girls career adaptability also mediates its effect on future orientation. Therefore, positive creativity can be assumed as an important factor in the process of designing one's future life or career. The resources girls can count on for developmental tasks and career transition [4] are then influenced by how much they're used to spend their positive creativity. This result may be interpreted considering the different conditions of careers between man and women in the work market, where women have to face harder challenges for constructing their career paths. Especially in Italy, where fewer than half of working-age Italian women are in employment and, just like in the rest of the world, have lower incomes than women, successful career paths may be more hardly thinkable for young girls. This is why girls may need to make a stronger creativity effort in order to develop the adaptability skills, which allow them to make career plans. By the way, no direct effect was found between positive creativity and future orientation. The only significant effect between the two is mediated by career adaptability, showing that creativity only allows girl to be more ready to manage change and career tasks, while it has no direct link on the possibility of thinking one's future. The only effect which was found significant both for males and females is the positive influence of career adaptability on future orientation, which confirmed the original hypothesis on the career adaptability construct [4] and previous studies on Italian adolescents [18]. Although it was pictured that negative and positive creativity are not necessarily rigidly linked to negative and positive outcomes [16], results showed that while positive creativity had a positive effect on career adaptability, which mediated its effect on future orientation, no significant effect was found for negative creativity and that therefore, being capable of using "dark" original solution has no impact on the career construction process.

6 Conclusion

Among the different results, attention must be paid to the indirect effect between positive creativity on future orientation mediated by career adaptability. In this direction, the study deepened the relationship between positive creativity and career adaptability. Regarding the dimensions of career adaptability, it may be important to carry out examinations of the four subcomponents instead of only general career adaptability, in order to evaluate potential differential effects of single sub-dimensions (concern, control, curiosity, and confidence). In fact, from the first analyses, in progress, a stronger relationship emerges between positive creativity and curiosity in female group.

Moreover, future research could also consider further positive psychology variables to deepen the role of gender in creativity use, which could also be taken into account for possible interventions.

Our findings have important conceptual and practical implications.

First, the study provides support for counseling interventions to help individuals design their future by creativity. According to previous studies [25,26], creativity play a central role in career counseling because it allows individuals to look at a situation from different perspectives. In addition, in a society characterized by technology and virtual reality, career practitioners can use creative methods, facilitating the counseling process in moving toward a meaningful future [27]. Taking into account the link between creativity and technology [28,29,30], the gender differences in creativity use highlighted in scientific literature [31], creativity training based on technology could be implemented in higher education, as well as in academic settings [32,33].

In conclusion, especially for girls, the creativity skills could facilitate the career construction process during the school-to-work transition. In particular, we refer to career adaptability, as sets of skills necessary for greater adaptability to changes in the current labor market. As economic crisis do not spare the future of young people [34, 35], the positive creativity [16] could be considered as an important element to face and manage this de-jobbing era [36].

7 References

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