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**Callous unemotional traits in two Italian Secondary Schools:
environmental and scholastic variables related to an emotional poverty¹**
**Tratti *callous-unemotional* in due scuole di secondo grado italiane: variabili
ambientali e scolastiche in relazione ad una povertà emotiva**

di

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Abstract

Affective poverty, strongly related to emotional illiteracy, has lifelong implications for the individual and can manifest through different behavioural problems. In this work, we took into consideration callous-unemotional (CU) traits, which are judged as one of the most serious forms of emotional dysfunction.

In childhood and adolescence, CU traits have been related to instrumental aggression, learning difficulties and serious conduct problems, all factors linked to early school dropout.

¹ Introduction (1), paragraphs 2, 5 and conclusions (6) by Margot Zanetti; methodology (par. 3) by Luca Rossi; paragraph 4 by Margot Zanetti and Luca Rossi.

With the present research, we first wanted to verify the presence of these traits among the students of two high schools, one in Veneto and one in Lazio (227 boys and 460 girls, average age: 16 years) through the Inventory Callous-Unemotional. We then observed which variables, including environmental ones, were linked to a significant presence of CU traits. The results showed that geographic location and socio-economic status are irrelevant factors. The wider results obtained confirm the need for educational programs aimed at developing emotional intelligence.

Keywords: CU traits; emotional illiteracy; socio-economic status; high school; emotional education

Abstract

La povertà affettiva, fortemente correlata all'analfabetismo emotivo, ha implicazioni sull'individuo per tutto il corso della sua vita e si può manifestare attraverso diversi comportamenti- problema. In questo lavoro si sono voluti prendere in considerazione i tratti callous-unemotional (CU), ritenuti una delle più gravi forme di disfunzione emotiva. I tratti CU sono stati infatti correlati fin dall'infanzia ad aggressività strumentale, difficoltà di apprendimento e a gravi problemi di condotta, fattori a loro volta legati all'abbandono scolastico.

Si è dunque voluto verificare la presenza di questi tratti tra gli studenti di due scuole secondarie di secondo grado, una nel Veneto e una nel Lazio (227 maschi e 460 femmine, età media 16 anni) tramite l'*Inventory Callous-Unemotional*. Si è poi voluto osservare quali variabili, tra cui quelle ambientali, fossero legate ad una rilevante presenza di tratti CU. I risultati hanno visto come fattori non rilevanti la locazione geografica e lo status socio-economico. I più ampi risultati ottenuti confermano la necessità di programmi educativi mirati allo sviluppo dell'intelligenza emotiva.

Parole chiave: tratti CU; analfabetismo emotivo; status socio-economico; scuola superiore; educazione emotiva

1. Introduction

In recent years, many disciplines investigated what could underlie early problem-behaviours with the aim to understand and manage them. Not secondary are also the aims to re-educate them and to make prevention. As a matter of fact, it has been shown that the more serious the deviant acts, the more serious a possible criminal career will be (Piquero & Farrington, 2003). Problems linked to behaviour, if not managed opportunely, can worsen overtime. Childhood and adolescence have been thus explored in search of risk factors, and poverty has often found a place of honour among them. (Denney, 2019). As a matter of fact, individuals showing more problematic attitudes and difficulties often come from poorer contexts and families with lower socio-economic status (Heilmann & Kann, 2019). It must be immediately stated that this is a statistical correlation born with the discipline of Sociology of Deviance almost a century ago. This does not mean that individuals subject to poorer economic conditions are ipso facto deviant (meaning statistically different from the majority of people) or worse, criminal. Nevertheless, socio-economic difficulties could mean less opportunities, both socially and educationally (Ayscue & Orfield, 2016). Economic poverty can be reflected in poor health, again, which can be both physical and psychological, in a vicious circle. More complex is a hypothetical correlation between economic poverty and emotional poverty.

Affective poverty has been considered only in recent years and describes a semantically complex field, like the other sectorial poverties in which the term "poverty" is associated ad extra to further conceptual categories. We can consider it as a lack of acquired emotional skills, that make the

individual less aware of his/her emotional states and of those of others (Calloni, 2019; Goleman, 1997). This can be a variable that leads to superficial relationships and a less satisfying life. Unfortunately, it is not clear how to measure it and, hence, to relate it to other forms of poverty, even the economic one, which is rather easier to define and calculate. Therefore, we decided to investigate one of the most serious early emotional dysfunctions, namely the callous-unemotional traits, considering them as an evident affective poverty (Frick et al., 2014; Bergstrøm & Farrington, 2018). They are defined as precursors of adult psychopathic disorder, a personality disorder characterized by lack of empathy, remorse and guilt, exploitation of others, lies and instrumental aggression. They have also been found in the very young population and different causes have been supposed for this. There are scientists who focus on their genetic and biological correlations, and fewer who take environmental variables into account. There is a general agreement about the possible consequences of having CU traits: the emotional illiteracy that they cause leaves marks since the scholar age, making them more prone to bullying acts, difficult relationships, learning difficulties and the expression of different problem-behaviours (Thorntorn et al., 2014; Ciucci et al., 2014). These problems can lead to the development of a serious criminal career. It is therefore of fundamental importance to investigate if these lacks can also depend on educational practices and environmental variables, including socio-economic variables, not to dismiss it as an “innate disorder” and therefore avoid dealing with it educationally.

2. The study: Callous unemotional traits in scholastic environments

Callous-unemotional traits have been sub-divided in three main scales and characteristics by the Inventory Callous-Unemotional, one of the most used test to assess the presence of the traits: callousness, uncaring, and unemotional. These are features that can be present in different measure in young individuals, but that can be alarming when they are particularly high. The profile of the student with CU traits is usually characterized by lower academic results, difficulties in learning, conduct problems, and indifference to reward or punishment (Allen et al., 2016). The difficulties are from both the teacher and the student perspective. The student with high CU traits shows some similarities with the adult psychopath and has difficulties in processing negative feedback. It is supposed that these difficulties derive not only from a different brain functioning, but also to their incapacity to detect and understand negative emotions of others, above all anger and sadness. They moreover manifest lacks in facial and auditive emotion recognition (Gillen et al., 2018). Cognitive impairments have been also found in reading comprehension, but it must be wondered if the impairment is due to a concrete cognitive obstacle or to the fact that individuals with high CU traits do not really care about performance, and hence are not interested in academic achievement (Vaughn et al., 2011). This brings us to another important step of the students' perspective: motivation. Students with high CU traits usually are less motivated to perform and behave good at school also because, as they are not able to perceive the others' disappointment, they cannot really understand the importance of this.

From the teachers' point of view, the relation with the student with CU can be very frustrating: he/she seems impermeable to reprimands, punishments, low grades and indifferent to his/her emotional reactions of anger and disappointment, but also of worry (Allen et al., 2020). As it is known, all these variables have been linked to early school dropout. And early school dropout is correlated with a higher likelihood to undertake a criminal career and/or with a less satisfying life (Doyle & Keane, 2018).

This study has different aims: a) to detect the presence of the CU in the Italian scholastic population and attempts b) to investigate the variable related to them and c) to formulate evidenced-based hypothesis about the possible educative strategies to manage and, possibly, attenuate them. The sample is composed by 227 boys and 460 girls, average age 16 years of age, from two secondary schools of two different regions, relatively Veneto and Lazio. One school is private and situated in Verona, Veneto, the other is public and situated in Rome, Lazio. We deduced the socio-economic status from the *per capita* income of the two regions (25.698 euros in Veneto, 17.926 in Lazio, data of 2019²) and the difference in the costs of attending the two schools (only the school fees of a private school is in media more than 3.000 euros per year). Therefore, we also considered geographic location as a socio-economic difference.

3. Methodology

Participants and Procedures

The questionnaires have been administered to a sample of 689 high school students, 16 years old on average, in Veneto and Lazio (two Italian regions of North and South Italy, respectively). We considered the sample as diverse with regards to socio-economic status and school education, but representative of families in the school districts, since one is a private school in the city centre of a northern city, while the second is a public school on the outskirts of a city in the south-centre.

Prior to data collection, the approval of the headmasters and school councils was obtained for all study procedures. Written parental consent was obtained and student's participation was voluntary. Parents and adolescents were not compensated in any way for study participation. Students completed the questionnaires individually in their classroom and the order of administration was counterbalanced across classrooms. The questionnaires were administrated by trained assistants who ensured the anonymity of answers.

3.1 Measures

For this part of the research, the tests taken into consideration are the Inventory Callous-Unemotional (ICU) and the Strengths and Difficulties Questionnaire (SDQ) as behavioural verification of the first.

The SDQ is a 25-item screening instrument designed to evaluate social, emotional, and behavioural functioning in youth. It is made up of 4 clinical domains, plus one: a) hyperactivity-inattention; b) emotional symptoms; c) peer-relationship problems; d) conduct problems; e) prosocial behaviour. Each item is rated on a 3-point Likert scale. The psychometric properties of the SDQ have been verified in different cultural and clinical contexts and were found to be suitable (Vostanis, 2006).

The Inventory of Callous-Unemotional Traits (ICU) is a 24-item questionnaire, each of which is rated on a four-point scale (0 = not true to 3 = very true), aimed at providing a complete assessment of callous and unemotional traits. These traits have proven to be relevant for defining a distinct subgroup of antisocial and aggressive youth. The ICU presents three subscales: Callousness, Uncaring, and Unemotional. It has been developed to be auto-administered or to be filled by persons near to the young under assessment (e.g. teachers, parents). In this work, the Youth Self-Report (Ciucci, Baroncelli et al., 201e) and all the three factors (3F) have been used. The number of factors assessed ranges from two to three, with varying content (Benesh et al., 2014; Henry et al.,

² www.comuni-italiani.it

2016). We decided to look for correlations of callousness, uncaring, and unemotional factors. Some scholars suggested to use two-factor (2F) models, usually including callousness and uncaring factors, ignoring the unemotional factor (Moore et al., 2017). The reason of this omission is that unemotional features are considered as not useful for detecting psychopathic traits or externalizing problems. We decided to keep also the evaluations of the items 2 and 10 of the ICU, because, even if, as underlined by Ciucci and Baroncelli (2013), it presents a lower correlation in the assessment of callous-unemotional traits, we found relevant results anyway.

4. Results

The 56, 2% of respondents shows at least one of the three callous-unemotional traits, in particular the 4,6% of the total presents three traits while the 15,9% showed the presence of two traits. We had coherent results with the Strengths and Difficulties Questionnaire (SDQ), thus we could consider more reliable our results from the ICU (figure 1)

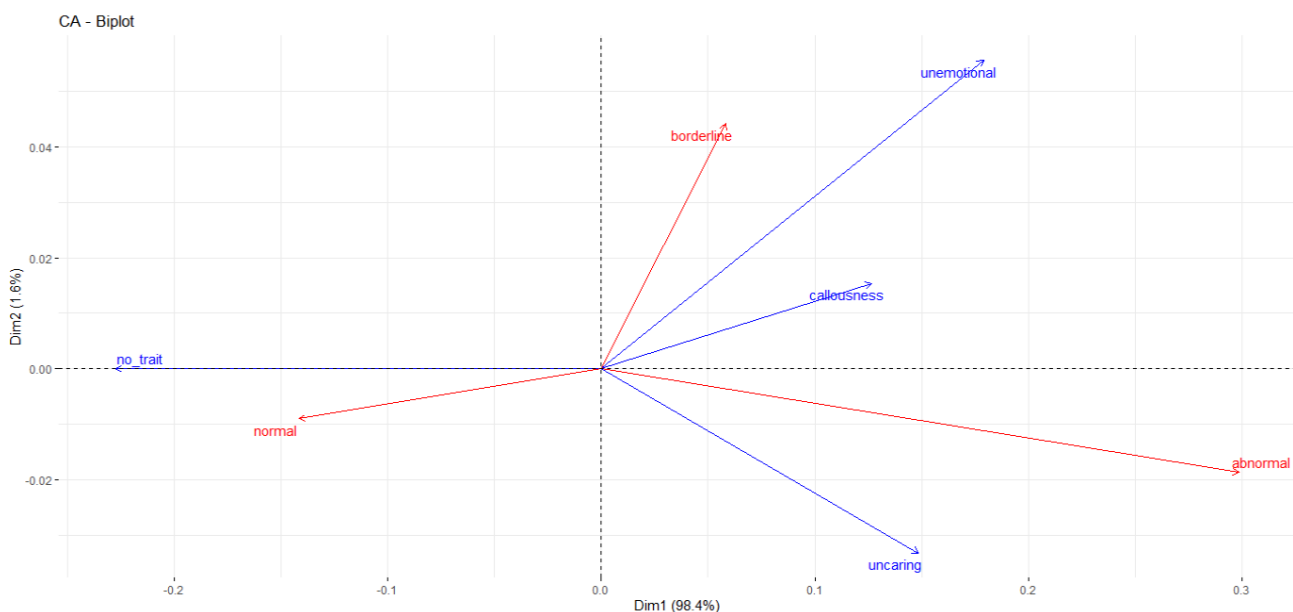


Figure 1: general correlations between ICU and SDQ

We first investigated the gender difference finding out that comparing the averages of the three preponderant traits always shows slightly higher values in males.

callousness	Mm = 1,00 > Mf = 0,79
uncaring	Mm = 1,12 > Mf = 0,93
unemotional	Mm = 1,32 > Mf = 1,24

Figure 2: Cu traits and gender

In order to verify if there really is a difference between the means of the two populations from which the samples themselves derive, a *t-student* test was carried out, and confirmed the relevance of the genus.

The search for possible differences in the two geographical positions was then carried out, which meant investigating possible discrepancies between the socio-economic conditions. From the comparison of the averages of the three predominant traits, it is important to notice: a) slightly higher values in callousness and unemotional traits in the Southern population; 2) slightly higher value in the uncaring trait in the Northern population:

callousness	MN = 0,82 < MS = 0,92
uncaring	MN = 1,02 > MS = 0,95
unemotional	MN = 1,25 < MS = 1,29

Figure 3: Average of traits and geographical location

However, the application of t-student test showed that the variability of the geographical position is not significant for a value $p < 0.05$ and instead the variability is randomic: the geographical position cannot be considered discriminating as, therefore, the socio-economic status.

	t-value	df	p-value
callousness	1,39493	687	0,06
uncaring	1,6087	687	0,11
unemotional	0,9902	687	0,32

Figure 4: t- student test for geographical location

The next step was to understand if there could be other environmental and/or individual variables influencing the presence of the traits. We took into consideration the family situation and the use of drugs, both resulting positively correlated (in both situations the t-student tests showed a p-value lower than 0.05). Comparing the averages of the three preponderant traits always shows slightly higher values in children of divorced families.

callousness	MD = 0,96 > Mc = 0,83
uncaring	MD = 1,06 > Mc = 0,98
unemotional	MD = 1,29 > Mc = 1,26

Figure 5: Traits are higher in individual in divorced families

callousness	MND = 0,83 > MD = 1,16
uncaring	MND = 0,98 > MD = 1,21
unemotional	MND = 1,22 > MD = 1,36

Figure 6: Traits are higher in individuals who use drugs

Finally, we wanted confirmations about the facts observed in literature, that see students with callous-unemotional traits related to more formal and informal reprimands from teachers and lower academic results. We formulated four possible answers: 1- never had reprimands; 2- sometimes; 3- often; 4-very often.

	<i>Never</i>	<i>Sometimes</i>	<i>Often</i>	<i>Very often</i>
<i>Average callousness</i>	0,77	1,09	1,62	1,34
<i>Average uncaring</i>	0,93	1,23	1,23	1,28
<i>Average unemotional</i>	1,25	1,30	1,33	1,35

Figure 7: CU traits and formal reprimands

As can be seen from the table, the average values of the three sections increase as the number of official reminders received by students increases. In order to verify if the 4 means are really different, the ANOVA method and the least significant difference (LSD) test of Fisher were applied using the software R: the results highlighted a strong correlation between ICU traits and formal and informal reprimands.

Similarly, we looked for the academic results, giving four possibilities: 1-low; 2- medium; 3; medium- high; 4- high (Italian marks go from 0 to 10 in secondary schools of first and second degree).

	<i>Low</i>	<i>Medium</i>	<i>Medium-high</i>	<i>High</i>
<i>Average callousness</i>	1,11	0,97	0,81	0,69
<i>Average uncaring</i>	1,11	1,04	1,01	0,78
<i>Average unemotional</i>	1,53	1,25	1,28	1,21

Figure 8: CU traits and academic marks

As can be seen from the table, the average values of the four sections decrease with the improvement of academic performance. In order to verify the variability of the results in relation to these three traits, even in this case, the Anova method and the LSD test of Fisher were applied, and the results highlighted what was indeed written in the literature: lower academic results correspond to higher CU traits.

5. Discussion

Our findings seem to be coherent with those obtained and presented by international literature, which is that Callous-unemotional traits are prevalent in males. Nonetheless, it must be highlighted that the gender difference, even if relevant, is not very high. As a matter of fact, females present CU traits too, just they are probably expressed differently from males.

Interesting to note is the absence of relevant differences between the northern and the southern population that we considered parallel to the socio-economic variable for the reasons explained in the introduction. Slight differences have been found in the predominant traits, like for example that northern students were higher in the uncaring dimension, while in the southern students resulted higher in the callousness and the unemotional dimensions. Despite the fact that it is rather irrelevant from a general perspective, implying that the percentage of individuals with these traits is similar in both populations, it could be an interesting difference to investigate. Nevertheless, what resulted more interesting in our results is that CU traits seem not directly related to socio-economic status. We must point out however, that our sample was not deeply investigated in its socio-economic status and it is likely that it did not include many students in a true situation of poverty. However, previous results in literature are supporting the finding that consider socio-economic status not directly related to the development of emotional dysfunctions. In the study of Waller and colleagues, for example, which selected monozygotic twins separated at birth as a sample, researchers found that poverty was not related to a worsening of CU traits (Waller et al., 2018). What, instead, resulted strongly related was the familiar situation, more precisely, the case of a harsh discipline and a cold relationship between parents and children. They found this kind of discipline in low-income families above all, and this is the only connection they detected between poverty and CU traits. This confirms that the affective poverty represented by callous-unemotional traits is heritable, in the sense that it is an emotional illiteracy mostly learned. This must be underlined since there is a high percentage of literature studies that look for the genetic components of CU traits and psychopathy, relegating environmental variables as contingent (Raine, 2014). Of course, biology has its important role, but the studies on early deviant and criminal behaviour are giving more and more importance to contextual variables (Belsky and Pluess, 2019). If this is true, it means that even the most dangerous personality traits are educable. It means that it is possible to intervene, for example, with parent training and specific courses aimed to develop emotional intelligence. As a matter of fact, the familiar situation resulted to have relevant effects in our research, too: students with divorced parents showed higher CU traits. This, in our reading key, does not mean that all the individuals with psychopathic traits have a divorced family or, on the

contrary, that a couple that decides to divorce will have to worry about its children developing criminal traits. The majority of our sample did not show the aforementioned traits and adolescents with separated families were included in the research, too. The results indicate that an individual with these traits could have a worsening of them in a stressful situation like the one of a divorce. But the separation is not the cause of the traits: on the other hand, it is attachments that presents the stronger correlation with the traits. (Rehder et al., 2020). Hence, an intervention that includes parents seem strongly suggestable, in particular in early age.

Working on the CU traits as early as possible seems important to guarantee an appropriate learning and social life to the individual, too (Blewitt et al., 2019). Results support previous findings and the hypothesis that see students with high CU traits achieving lower academic results. In our research, it is possible to notice that the lower the marks, the higher are the CU traits. Again, it must be reminded that these are the individuals who already present the traits; hence, we are not talking about all the individual with low marks. It can be hypothesized that, as mentioned in introduction, these difficulties are due to lack of motivation and learning obstacles linked to an abnormal way of processing information. Nevertheless, it can be supposed that these impairments are also due to a general weakness of their emotional intelligence. It is well-known that emotions play a crucial role in learning and it is logical to suppose that emotional dysfunction could lead to learning impairments (Di Fabio et al., 2016).

Individual with CU traits are also those that report a higher number of formal reprimands. We chose the formal reprimand as a parameter since it can be considered the teacher judgement of the student's behaviour and, moreover, it is traceable. This confirms that students with CU traits are of very difficult management and are those who create a large percentage of the problems in the classroom. It was something we expected since we had a positive correlation with the SDQ results, above all with the externalizing behaviour. They are the most evident conduct problems and their presence is coherent with the CU traits (Gritti et al., 2014).

6. Conclusions

Callous-unemotional traits can be considered signs of affective poverty and/or emotional illiteracy since it is very complex to establish common variables to assess the latter. The features of CU traits are, as a matter of fact, highly superimposable to those related to the definitions of them: lack of comprehension and management of emotions, superficial relationships, scarce empathy (Frick et al., 2014). We investigated the presence of CU traits in the Italian adolescent population, with the aim to understand their possible correlation, and, consequently, even also how to intervene. Children and adolescents spend much of their time at school, and, therefore, it is important to have the means and knowledge to understand their problematics and to face them. What teachers and educational professionals see every day are different problem-behaviours. They cannot always know their origin, but they could be aware that normal strategies cannot work and implement new ones. Specialists could formulate new didactics paths, following psychological and neuroscientific findings (e.g. Chojak, 2018). Our results confirm the presence of CU traits in a percentage of adolescents and that this percentage is related to externalizing behaviours. Moreover, we found correlation between CU traits and gender, familiar situation and the use of drugs. The relations between the traits and the geographical location and the socio-economic status are, instead, irrelevant. CU traits have been also related to lower academic results and more formal reprimands by teachers. This could contribute to explain partially the hypothetical correlation between

economic and affective poverty mentioned in the introduction of this work. It is not poverty to be correlated with the development of affective poverty, but rather education, a harsh discipline, and a cold parental relationship, that in literature seem more related to a very poor context but it is not its exclusive (Baglivo et al., 2020).

These findings confirm the necessity to structure serious courses for the development of emotional intelligence and to plan specific anti-bullying programs (Castillo- Gualda et al., 2018; Salmivalli & Kätlin, 2018).

In literature, there is a general agreement on the importance of environmental and family factors on the development of deviant behaviour (e.g. Henry et al., 2018). It therefore appears important to find ways of involving families in the emotional development activities of children. Of fundamental importance is also the necessity to develop new forms of didactics that could be adopted by support teachers. CU traits could be considered special needs as other learning difficulties. Not working on specific strategies to deal with these students is leading them to marginalization, exclusion, and a worse quality of life. This is the reason why, in the next step of this research, we investigated learning style, hypothesizing how students with CU traits could learn at school.

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