

Self-centeredness in Adolescents: An empirical study of students of Steiner schools, Christian academic high schools, and public schools

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ABSTRACT. We intended to further analyze the attitudes of 17 year old high school students associated with more self-centered positions on the one hand and altruistic tendencies on the other hand. Previous findings indicated that 'self-centeredness' is particularly valued by boys while less so by girls. In a sample of 521 German high school students (mean age 16.6 ± 0.70 years) recruited from Christian schools (38%), Waldorf schools (36%), and public (state-funded) schools (27%), we investigated influencing factors such as schooling, individual ideals / ethics, and spirituality. We confirmed that 'self-centeredness' was expressed significantly lower in female than in male students; yet there were no significant differences which could be ascribed to the different school types. Regression analyses indicated that this self-centered position can be predicted best ($R^2 = .211$) by an attitude focussing on one's own well-being ('eudemonism') and the conviction that pity for others prevents them from taking the initiative themselves; these predictors are negatively modulated by satisfaction with the school situation, a spiritual *Quest orientation*, and the ideal of helping others. Although the school type by itself is not a significant predictor of the respective attitudes, the associations between self-centeredness and ethical ideals nevertheless differed between students of the different schools types. It might be that families with specific attitudes or convictions choose those schools that are best suited to their ideology. The school nevertheless will have a significant impact on the ethical commitment of students and can contribute to the process of adolescents' development to future adults as relational and moral beings.

Key words: high school students, self-centered attitudes, altruistic tendencies, Christian schools, Steiner (Waldorf) schools, public schools, spirituality, individualization, shift in mentality, religious orientation.

Introduction: Conditions of value orientation of young persons today

Both psychology and sociology generally regard adolescence as an intermediate stage linking the age of childhood with that of the autonomous adult. 'Adolescence' may therefore be defined by developmental tasks which must be fulfilled if this transformation is to succeed. The educational researcher Hurrelmann considers four areas of tasks as key competences to be achieved for later adulthood: a) A differentiated intellectuality with social skills; b) The formation of an independent gender role and social bonding; c) The ability to handle money and other financial matters; and d) The development of value orientation and participation in political discussion (Hurrelmann, 2010). This ideal-typical profile is currently undergoing a change. Especially in western society, a 'status inconsistency' can be observed. Under the influence of changed social conditions, adolescence establishes new forms of social relationships and of self-centeredness. E.g. the early handling of money strengthens young people's status as confident consumers, while many 'no longer regard marriage and having children as an integral part of living together' (Hurrelmann 2010, p. 38). Based on such research, a moving away from the concept of 'adolescence as a transition stage' can be observed. Brinkhoff & Ferchhoff (1990, p. 111) even view adolescence as a phase of life in its own right, with qualities that will not recur in later life. At the same time, society's view on adolescence changed also, crediting young people with a profile of independence that goes

beyond a mere waiting for adulthood. The dynamic of this individualization retroacts on adolescents and highlights two related aspects: An increase in early independence also means a greater call on adolescents to take responsibility for themselves. Only when combined, these qualities offer an 'opportunity to plan and, if necessary, implement one's own development and personal biography free from any social constraints and independent of one's social roots but according to one's individual interests and demands, needs and objectives'. (Mansel, 1995, p. 18).

But by which factors are adolescents influenced with regard to their attitudes and associated value orientations?

In light of the present state of discussion, this remains an important and, thus far, unanswered question. The American sociologist Inglehart (1989) established a theory based on empirical data. He observed that, in western societies in the period between 1960 and 1990, a shift took place away from material values, e.g. economic security, pursuit of wealth, toward the 'post-materialistic' values of self-development, self-fulfillment but also social participation and an interest in ecology. In contrast, Hurrelmann stated a statistically significant 'shift in mentality' at the dawn of the 21st century, with the 'primacy of ecological behavior' changing to one of economic behavior (Hurrelmann, 2010, p. 147). 'Performance, power and conformity-related value orientation is on the increase while values based on active involvement, e.g. ecological, social and political, are in decline.' (ibid.). Supported by the 2002 *Shell Youth Study*, these findings point to the inner constitution of adolescents and their readiness to tackle their own personal problems rather than participate in a process of social reform (Hurrelmann, ibid.). This stocktaking does not merely reflect the current situation in Germany but applies also to other countries and cultures, e.g. Japan and Russia (Stevenson & Zusho, 2002; Stetsenko, 2002). Jennifer M. Gidley (2010) identified "new ways of thinking within several disciplines such as science, philosophy, religion and education". Also Gangadean (2010) stated a shift in several dimensions of cultural life and in human conditions. But the direction is more or less unclear. Gangadean (2010) suggested that "our future sustainability now turns on bringing forth this mindshift from egomental patterns to more mature holistic, integral and dialogical patterns of being human through our dilated global lens". But is this really a trend – or just a matter of hope?

Self-centeredness, values, aspects of spirituality, and school forms: The study design

Recently we investigated aspects of spirituality in 17-year old adolescents and found that the non-formal aspects of spirituality in terms of relational consciousness (particularly secular humanism, e.g. conscious interaction, compassion/generosity) were of outstanding relevance (Büssing et al., 2010b). Moreover, conscious interaction and also transcendence conviction were negatively associated with 'self-centeredness', which was, however, particularly valued by boys (52%) while less so by girls (35%).

The question arises whether this trend toward self-centeredness among (male) adolescents is influenced by factors such as culture, schooling, ideology or religion. What attitudes are associated with more self-centered positions, and under what conditions can perhaps more altruistic tendencies be observed, going against the general trend. We thus intended to further analyse these attitudes of self-centeredness in the context of compassion and eudemonism on the one hand, and the perceived sense of responsibility for the moral development of society on the other hand, and also their associations with aspects of spirituality, and the influence of different school types.

The design of our current study made it necessary to give the above-outlined trend toward adolescent self-centeredness more transparency, which was achieved as part of a comparative analysis within the schooling environment. The creation of an orientation of values and standards in students is not only a result of knowledge transfer but an intended side-effect of the socialization authority that is schooling (Fend, 1976; Rolff, 1997). Also, the choice of educational establishment already reflects preferences and values of the student and their family (Gensicke, 2007, p. 123, using the example of Waldorf schools). For that reason, school environments with different school cultures are particularly suitable for comparative analyses of adolescent attitudes.

In order to identify suitable school environments, the students' spirituality as an expression of their individualized search for meaning was again of relevance, as was their intrinsic religiousness. In Europe, there appears to be a markedly increased interest in this group of subjects. The significance of religious and spiritual needs and their impact on coping with life and the prevention of sickness is at the heart of much of the relevant research (Seyringer et al. 2007; Büssing et al. 2008, 2009, 2010). Earlier assumptions, stipulating that modernization would necessarily result in secularization and thus the vanishing of religion, were not borne out. Religious communication and a spiritual search for meaning can survive independently of social and political contexts. Their impact on the way people conduct their lives.

In order to study the conditions and correlation of the instance of self-centered attitudes among adolescents, we chose three different school types based on distinguishable educational theories: a) Christian academic high schools (grammar schools), b)

Steiner Waldorf education, and c) conventional public schools. The educational theories of both Christian and Waldorf schools emphasize a claim to a comprehensive self-development and a non-materialistic cultural view of their students. Arguably, both school types enjoy a large proportion of educationally interested and involved parents. Waldorf and Christian schools are part of the so-called third school sector, i.e. they are privately funded. They meet a demand that, according to a 1994 survey, 1 in 5 families in western Germany feel passionately about, namely for their children to attend a private school (Weiß & Preuschoff, 2004, p. 116). Public schools, by contrast, emphasize their educational foundations not in the context of specific philosophical, cultural or religious traditions, but as cultural neutral institutions, by promoting a cultural pluralism that claims to be unbiased. The parents of these schools must be regarded as socially more heterogeneous.

Materials and methods

Participants

In this anonymous survey, we enrolled 521 adolescents from eight different high schools located in the same area of western Germany (Dortmund, Hagen, Haltern, Olfen, Essen and Schwerte) and two from Switzerland (Basel and Bern). The survey was conducted among 11th grade academic high school (or grammar school) students. Standardised questionnaires were distributed by the respective teachers of the participating school classes. The students (and their teachers) were assured of confidentiality, gave informed consent to participate, and completed the questionnaire, which was entirely anonymous. We had neither inclusion nor exclusion criteria (with the exception of the respondents' willingness to participate).

School types

To I: For *Christian academic high schools*, Christian values form the framework for the structuring of both social interaction and learning. The *quality criteria for Catholic schools* formulated by the Deutsche Bischofskonferenz (German conference of bishops) focus on three guidelines of their educational offering: 1.) 'The basic conviction of the personal dignity of the child and the adolescent based on the firm belief that God created man in his own image.' [Die deutschen Bischöfe, 2009, p. 10]; 2.) 'The endeavor to achieve an interpenetration of belief, culture and life.' (ibid.); 3.) 'The general principle of the educational community, a principle that can be conceived as the consequence of the understanding of education and the aspiration to let the organization of school life be guided by the basic convictions of the church's belief.' [Die deutschen Bischöfe, 2009, p. 13]. In addition to knowledge transfer, teaching has the clear mission to let the students' development of their personality and formation of values be guided by Christian ideals.

For this study we had only schools with a Catholic background. Nevertheless both Catholic and Protestant schools find common ground in a *self-concept of being providers of social welfare work* which emphasizes the importance of the community of students, teachers and parents. 'Both Protestant and Catholic church schools endeavor to provide social education that follows the work of Christ' (Standfest et al., 2004, p. 361). A further profile of church schools is their acceptance of the future challenge of globalization in the sense of fair development. (Standfest et al., ibid.) With respect to school climate (satisfaction, teacher-student ratio), church schools showed more favorable results compared to state schools. Slightly, but not significantly, more favorable differences were evident with regard to inter-student relationships (Standfest et al., 2004, p. 372). However, the ongoing popularity of church academic high schools in recent years cannot be explained by an interest in the educational concept they aim to implement.¹ This increase might be also due to a parental claim to exclusivity: The decisive factor is not always the superior learning setting but a perceived conservative value orientation, both in the classroom and the family environments (Rösner² based on Hock, 2010).

To II: For over ninety years, *Steiner Waldorf schools* have established themselves as an educational alternative to state and private schools alike. With 219 locations in Germany, including 36 in North-Rhine Westphalia, and approximately 1,000 schools worldwide, the *Steiner Waldorf schools* model is beginning to attract worldwide research interest (Woods et al., 2005; Gidley, 2007; Dahlin, 2010). Structurally, it is a comprehensive school with a special educational character and a stand-alone educational program based on differentiated general and subject-specific didactics (Ullrich 2007, Schieren 2010). In the school's approach to education, the child is an individual spiritual being that can be inspired into developing. Pedagogy and education seek to support the potential to a stage where independence and emancipation become valuable experiences for the students. According to the unique point of view of education, the spiritual dimension is not expressed in the learning contents but rather in the way they are

1. In the area of general education, private schools currently make up approximately 5% of schools in the state of North-Rhine Westphalia. This does not include Waldorf schools. There are 119 Catholic and 42 Protestant schools. With regard to church high schools, there are 79 Catholic and 18 Protestant high schools (based on Beyer, H.F., 2006, p. 184)

2. Ernst Rösner is principal of the Institut für Schulentwicklungsforschung (institute for research into school development) at the Technische Universität Dortmund (University of Technology).

taught. Waldorf teaching employs methods that address physical, artistic and emotive aspects of the children and encourage their intuition in order to achieve as broad as possible a basis for their self-development (Schieren, 2010).

According to the graduate study by Barz & Randoll (2007), parents of Steiner Waldorf school students must be educationally interested and socially well-off (Randoll, 2010, p. 129). When answering the open question as to why they chose to send their children to a Steiner Waldorf school, parents' top three reasons were: 1) Unique education (46.3%); 2) Dissatisfaction with the state school system (19.3%); and 3) Anthroposophical background (11.3%). Particularly this last fraction of parents has a firm interest in the unique philosophical background of Steiner Waldorf education. With reference to the question as to which attitudes and values are to be found among Steiner Waldorf educated students, a comparative study by Randoll (1999) and a retrospective graduate study by Barz & Randoll (2007) found that instead of self-centeredness, the respondents indicated openness, tolerance, and social responsibility, while ambition and assertiveness were less prominently ranked. According to a study by the Criminological Research Institute of Lower Saxony, KFN (Baier 2008), Waldorf students showed the lowest levels of xenophobia and intolerance of people of dissenting views when compared to their peers from other schools, 'which should also be seen against the backdrop of student body composition and the students' social origins' (Randoll, 2010, p. 140).

However, these findings do not admit the conclusion that they are an immediate outcome of the applied education but rather suggest they may also be influenced by the students' 'cultural capital'. Bourdieu (1983) defines cultural capital as any cultural asset or resource passed down the generations and contributing to a system's attitudes, normative orientations and qualifications necessary for the maintenance of that system. Cultural resources also include thought and value patterns that have been internalized in the course of socialization. Bonhoeffer & Brater (2007, p. 59) show in their graduate study that the career preferences of the responding former Waldorf students represent an above-average socio-economic status (ISEI), as did those of their parents.

To III: Public (state-funded) schools in Germany may follow different pedagogical philosophies and teaching methods. Although several of these schools seem to be more or less socially exclusive, it is a fact that they are becoming more multicultural, and thus, in contrast to the above mentioned school forms, in state-funded schools there is no explicit philosophical or religious commission. Nevertheless, it was reported that students attending a Gymnasium were more likely to be respectful and considerate of other peoples' feelings than those attending a comprehensive school (Baumert & Köller, 1998). Whether this is true or not is a matter of discussion.

Measures

The assessment of the respondents' degree of self-centeredness was based on the item 'Consideration for others is all very well. What matters ultimately though is that I get ahead in school and in my career', as previously tested in a pilot study (Büssing, 2010). Aware of the fact that mutual consideration is deemed socially desirable and thus, when asked directly, students would most likely respond (cognitively) positively, we phrased the item indirectly. The item was scored on a 3-point scale, i.e. 0 - disagree, 1 - neutral, 2 - agree.

We used single items to address the cognitive moral imperative to work on the development of society (M1 'I feel responsible for the moral development of society'), an altruistic attitude of helping (T4 'Even if others may smile at me, I cling to the ideal of helping others wherever possible') and the concrete engagement in helping others (S25 'I volunteer to help others'). These items were scored on a 5-point scale from disagreement to agreement, i.e. 0 - disagree strongly; 1 - disagree; 2 - neutral; 3 - agree somewhat; 4 - agree strongly.

Eudemonism was operationalized by the statement U3 'Everything in life boils down to the well-being of yourself', and pity/compassion (*Mitleid*) by the two negative statements T1 'The ideal of pity/compassion does not fit into modern society' and T2 'Pity/compassion prevents others from actively looking after their own needs', both related in Nietzsche's philosophy of the rejection of Schopenhauer's compassion or empathy.

In order to measure a wide variety of important aspects of spirituality beyond conventional conceptual boundaries, we developed the ASP ("Aspects of Spirituality") questionnaire (Büssing et al., 2007). For the present analysis, we used the 25 item ASP 2.1, tested in a study enrolling adolescents from religious education at high schools (Büssing et al., 2010b): This instrument differentiates (1) *Religious orientation: Prayer/Trust in God* (religious views; Cronbach's alpha = .93) (2) *Search for insight/wisdom* (philosophical/existentialist views; alpha = .88), (3) *Conscious interactions* (humanistic views; alpha = .83) and (4) *Transcendence conviction* (esoteric views; alpha = .85). However, when applied to students (Büssing et al., 2010b): The *Conscious interaction* items s21, s22 and 23 (alpha = .75) would diverge from *Compassion/Generosity* items s28 and s26 (alpha = .63); also the scale *Search for Insight / Wisdom* would diverge in two sub-constructs with items s10, s11, s12, s13 on the one hand (*Aspiring Beauty / Insight*, alpha = .76), and items s14, s15, s16 on the other hand (*Quest orientation*; alpha = .76). For this analysis we used the more differentiated structure of the instrument (ASP-students).

The term *God* was used only once. The marker items s32 'I identify myself with ethical norms' and s25 'I volunteer my time to work for others' were taken from the primary version of the instrument. All items were scored on a 5-point scale from disagreement to agreement, i.e. 0 - disagree strongly; 1 - disagree; 2 - neutral; 3 = agree somewhat; 4 - agree strongly. The scores refer to a 100% level, where 4 - agree strongly = 100%.

Life satisfaction was measured using the *Brief Multidimensional Life Satisfaction Scale* (BMLSS) (Büssing et al., 2009) which refers to Huebner's 'Brief Multidimensional Students' Life Satisfaction Scale' (Huebner et al., 2004; Zullig et al., 2005). The eight items of the BMLSS address intrinsic dimensions (*Myself, Life in general*), social dimensions (*Friendships, Family life*), external dimensions (*School situation, Where I live*), and prospective dimensions (*Financial situation, Future prospects*). The internal consistency of the instrument was good (Cronbach's alpha = .87) (Büssing et al., 2009). Each item was introduced by the phrase 'I would describe my level of satisfaction as ...', and scored on a 7-point scale from dissatisfaction to satisfaction (0 - terrible; 1 - unhappy; 2 - mostly dissatisfied; 3 - mixed (about equally satisfied and dissatisfied); 4 - mostly satisfied; 5 - pleased; 6 - delighted). The BMLSS sum score refers to a 100% level ('delighted').

Statistical analyses

Cross-tabulation (Chi²), descriptive, variance (ANOVA), correlation, and stepwise regression analyses were performed with SPSS 17.0 for Windows (SPSS GmbH Software, Munich). We considered a level of $p < 0.05$ as statistically significant. With respect to the correlation analyses (Spearman rho), we chose a significance level of 0.01, and regarded correlations $r > 0.5$ as strong, r between 0.3 and 0.5 as moderate, and r between 0.2 and 0.3 as small, while an $r < 0.1$ was regarded as irrelevant.

Results

Demographic results

Among the 521 adolescents, 53% were female and 47% male; their mean age was 16.6 ± 0.70 years. Most students belonged to a Christian denomination (53% Catholics, 29% Protestants), 6% other denominations, and 12% stated none. Most were living with both parents (64%), 20% with their mother, 3% with their father, 2% with others, and 11% did not specify.

The adolescents were recruited from three public schools ($n=139$), two Christian schools ($n=196$), and five Waldorf schools ($n=186$). However, religious denomination differed significantly ($p < 0.001$, Chi²) between these three school forms, e.g. in Waldorf schools, there was a predominance of Protestants (38%) and students without a religious denomination (29%), while in Christian schools, Catholics (72%) and Protestants (26%) made up the majority; similarly in Public schools, where Catholics represented 64% and Protestants 24% of the students.

Aspects of spirituality and life satisfaction

Religious orientation (Prayer/Trust in God) was significantly higher in Christian schools, while in Waldorf schools, both the *Quest orientation* and the *Transcendence conviction* were significantly higher as compared to the other schools (Table 1). With respect to *Aspiring Beauty / Insight*, *Conscious interactions*, *Compassion / Generosity*, and also *Life satisfaction*, there were no significant differences between the three school types.

Self-centeredness, ideals of helpfulness and responsibility for society

Self-centeredness was expressed significantly lower in female than in male students (Table 2): 49% of girls rejected the respective statement, 17% were undecided, and 33% agreed, while 36% of boys rejected, 14% were undecided, and 50% agreed ($p=0.001$, Chi²). With respect to self-centeredness, there were no significant differences which could be ascribed to the different school types (Table 2), and just a trend to the family status (lowest scores in students living with both parents) or religious denomination (highest scores in students belonging to a Christian denomination) (data not shown).

The cognitive statement to *cling to the ideal to help others wherever possible* (T4) was expressed by 51% of the students, rejected by 17%, with the remaining 32% undecided. Here, girls had significantly higher scores as compared to boys (Table 2), while there were no significant differences between different school types, family status or religious denomination (data not shown). With regard to concrete (*voluntary*) *engagement for others* (S25) 43% stated to be engaged, 42% were not, and 15% were undecided. In line with this trend, the lowest scores were found in boys (Table 2), students without any religious denomination (data not shown), while neither the school type nor the family status had a significant impact (data not shown).

The cognitive statement of *feeling responsible for the moral development of society* (M1) was expressed by 29% of the students, rejected by 33%, and 38% were undecided. There were no significant differences between girls and boys, family status or religious denomination (data not shown). However, students from Waldorf schools had significantly higher scores (Table 2).

As shown in Table 3, variance analyses (GLM univariate, between subject effects) revealed complex interactions of the independent covariates sex, religious affiliation, family status and school type on self-centeredness, the feeling of responsibility for the moral development of society, and clinging to the ideal of helping others.

Correlation analyses between self-centeredness, ethical ideals, aspects of spirituality, and life satisfaction

Self centeredness correlated moderately ($r < 0.4$) with eudemonism (operationalized as U3 'everything in life boils down to the well-being of yourself'), weakly ($r < 0.3$) positive with the negative statements regarding pity (T1 and T2), and weakly negative regarding the ideal of helping others (T4), and the concrete voluntary work for others (S25) (Table 4). Moreover, self-centeredness correlated weakly negatively with aspects of spirituality, particularly *Compassion/Generosity* and the *Quest orientation*, but not with life satisfaction.

Perceived *responsibility for the moral development of society* (M1) was moderately associated with *Aspiring beauty/Insight*, weakly associated with several other aspects of spirituality, and the altruistic ideal of helping others (T4) and its concrete implementation (S25), but not with pity, eudemonism and life satisfaction (Table 4).

Clinging to the *ideal of helping others* (T4) was correlated moderately with *Compassion/Generosity*, and correlated weakly with several other aspects of spirituality, volunteering to help others (S25), and eudemonism (U3), but did not correlate with pity or life satisfaction (Table 4).

Stepwise regression analyses confirmed complex predictors of the respective attitudes:

As shown in Table 5, regression model 5 explained 21% of variance (R^2) associated with self-centeredness, with eudemonism (U3, 'everything in life boils down to the well-being of yourself') as the strongest predictor, negatively modulated by satisfaction with the school situation, *Quest orientation*, the ideal of helping others (T4), and positively by the statement that pity for others prevents those from taking the initiative themselves (T2).

Clinging to the ideal of helping others (T4) in turn can be explained best by *Compassion/Generosity*, the conviction of being responsible for the moral development of society (M1), volunteering to help others (S25), and by the *Quest orientation* (Table 5).

Volunteering to work for others (S25) can be predicted best ($R^2 = 0.22$) by *Compassion/Generosity*, which is positively modulated by the religious orientation (*Prayer/Trust in God*), the satisfaction with the school situation, and the ideal of helping others (T4).

Similarly, the conviction of being responsible for the moral development of society (M1) can be explained best by *Compassion/Generosity*, the ideal of helping others (T4), and the *Quest orientation* (Table 5).

Correlation analyses between self-centeredness, ethical ideals, aspects of spirituality, and life satisfaction with regard to school type

Although the school type by itself is not a significant predictor of the respective attitudes, the associations between self-centeredness and relevant ethical ideals nevertheless differed between students of the various schools types (Table 6). Self-centeredness was negatively associated with volunteering to work for others, *Compassion/Generosity*, and *Transcendence convictions* in students from Waldorf schools, but not in students from other school types. In all students, self-centeredness was associated with eudemonism, most markedly in students from Waldorf schools (Table 6).

Discussion

In a previous investigation, we noticed that the attitude of 'self-centeredness' was rejected by most of the girls but accepted by most of the boys (Büssing et al., 2010b). The intention of this explorative work was to further analyze the underlying attitudes associated with self-centeredness in the context of compassion and eudemonism, their associations with aspects of spirituality, and the influence of different school types.

The findings of this study confirmed that both 'self-centeredness' and the ideal of helping others were of higher relevance in girls than in boys. However, the school type had no significant impact on these attitudes. Stepwise regression analyses indicated that the attitude of 'self-centeredness' can be predicted best by eudemonism and by the conviction that pity for others prevents

those from taking the initiative themselves. These associations are sound from a conceptual point of view. However, satisfaction with the school situation was a strong negative modulator of the eudemonism predictor, while the school type itself had no significant impact. This means that it is the individual experiences of the adolescents and their response to the ethical implications encouraged by their respective schools that are key rather than the educational system by itself, e.g. Waldorf, public or Christian school.

Looking at the positive ideals, e.g. helping others, volunteering to work for others, and the conviction of being responsible for society, it became evident that *Compassion/Generosity* was the best predictor, modulated by several other variables. Again, the unique school types were not among the significant influencing variables. However, this does not argue against the fact that the educational system is nourishing important attitudes during the development of the adolescents. In fact, the underlying attitudes of the adolescents are important, not the school types by themselves, albeit they may encourage clear-cut ethical positions. Students from Waldorf schools seem to be decided in their statements because all correlations were significantly stronger than in students from public schools and even Christian schools. These effects cannot be explained by significant differences with respect to self-centeredness, Life satisfaction, *Conscious interactions* or *Compassion/Generosity*, because those did not differ (Tables 1 and 2). At least we can state that *Quest orientation* and *Transcendence conviction* were expressed significantly higher in students from Waldorf schools, even though they are not among the significant predictors.

To draw a preliminary conclusion, one may argue that adolescents value positive ideals. School type, family status and religious affiliation are important modulating variables, in particular *Compassion/Generosity*. Schopenhauer (1986) argued that pity/compassion (*Mitleid*; in terms of *caritas*) is the greatest virtue and the sole basis of genuine morality, because it should be able to overcome selfish inclinations and to encourage acting for the well-being of others. Whether this attitude is actively fostered by the different school types or within the adolescents' private life (family, friends, etc.) remains to be shown. In the present analysis, this spiritual attitude did not differ between students of the different school types.

Moreover, certain aspects of spirituality are associated with positive ideals, while self-centeredness is only weakly influenced by spiritual attitudes; here, the satisfaction with the school situation was of higher relevance. This could mean that students behave differently according to their educational satisfaction, which may imply their grades, teachers, classmates, future perspectives, etc.

Of particular interest is the fact that conventional religiosity is of importance only to students volunteering to work for others, while secular humanism had a more general influence. In fact, conventional religiosity was the least relevant factor for all students. This is underscored by Anton Bucher (2009a) citing findings of Ziebertz (2008):

'A widespread notion about youths and young adults persists claiming that, in this phase of their lives, their attachment to religious communities becomes looser, their agreement with religious beliefs more tentative, and religiosity overall less relevant to their lives.' 'Nearly every era has joined in an elegy lamenting the rising generation's failure to sufficiently internalize the corpus of handed-down religious convictions, resulting in the abandonment of religious traditions and the spread of secularisation [...]' (Bucher, 2009a, p. 607)

This concurs with the findings of the 15th *Shell Youth Study*, i.e., 'Church-affiliated religiosity tends to *overstate* the normal value profile of today's youth with regard to a special adolescent subgroup by virtue of their stronger orientation toward family, social norms, health and social engagement.' (Gensicke, 2006). However, the author stresses that this is easily explained by the religious contents or their implications. This points to the case-specific impact³ of the cultural environment and its inherent contents on the selection of values.

Our findings confirm that ecclesiastic aspects of religiosity are less important, while the connective aspects of spirituality (*Conscious interactions*, *Compassion/Generosity*) were of high relevance. Bucher offers a similar interpretation. Having examined relevant qualitative studies of religious-spiritual traditions, he sees a recurring basic motive, i.e. that of *affinity* (Bucher, 2009, p. 15ff.). This value appears to be an empirical datum of spiritual life and intrinsic religiosity and applies independently of cultural background or geographic situation of the spiritually active respondent. In a differentiated view of this concept, two possible dimensions of *affiliation* appear: 'One extending vertically toward God, transcendence, a higher being, the other one horizontally, toward fellow man, nature, and even the entire cosmos.' (Bucher, *ibid.*). These orientations of affinity need not be imagined as mutually exclusive but rather as complementing each other and thus forming a unified whole. 'Center of action' of spiritual affinity is the human consciousness, with 'self-transcendence' representing a key feature. Letting go of one's own subjectivity is an inner necessity if spiritual experience of affinity is to take place on the different levels of being.

3. The term *case-specific* was chosen to highlight the fact that it applies to the environment of a social subgroup and cannot necessarily be generalized.

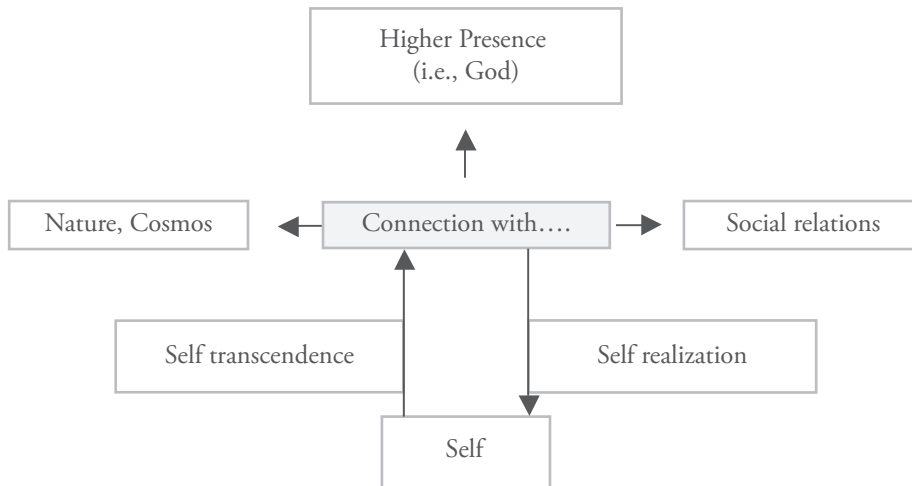


Figure 1: *Model of spirituality, modified according to Bucher, 2009, p. 16*

It is certainly possible to integrate religiosity or an active religious life into this model. In research literature, however, spirituality tends to be granted a greater degree of independence from institutionalized forms of spiritual activity, emphasizing the 'primacy of one's own transcendence experience and meditation' (Zwingmann, 2009).

Conclusion

In conclusion, we were able to further analyse the underlying adolescents' attitudes associated with more self-centered positions on the one hand and altruistic tendencies on the other hand - with respect to influencing factors such as schooling, individual ideals / ethics, and spirituality. Although we do not claim that the results are representative, we have no strong hints that the investigated school forms have an impact by themselves. Rather, we found that individuals (or their parents, respectively) with specific attitudes or convictions choose those school types best suiting their ideology (ideological, social, and economic selection). Nevertheless, distinct aspects of spirituality were identified as significant predictors of altruistic tendencies, while the more self-centered positions can be predicted by an attitude of eudemonism, which is negatively modulated by satisfaction with the school situation. This indicates that the school itself may have a significant impact on the ethical commitment of students and can contribute to the process of adolescents' development to future adults as relational and moral beings - with a responsibility towards environment, economy, and society. Whether and how this process of 'becoming' could be fostered and encouraged requires further research.

A limitation of this approach is that the cognitive statements of the students might not necessarily reflect their real behaviour. Moreover, this study does not claim to give a representative picture of Germany's school system. It was not the intention of this study to argue for or against a specific school form, but to refer to the specific (religious or philosophical) backgrounds of different school forms which may have an impact on distinct attitudes and values of adolescents. In fact, further studies enrolling more diverse conventional school forms are currently underway.

Competing interests

The authors disclose any funding received for this work from any organization. The authors were free to interpret the data according to a strict scientific rationale.

Authors' contributions

AB initiated the project, analysed and interpreted the data, and has written the manuscript. AFM has written significant parts of the manuscript, and contributed to the interpretation of the data. PH contributed to interpretation and the writing of the paper. All authors have read and approved the final manuscript.

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Table 1: Aspects of spirituality in students of different school types

		Prayer/ Trust in God	Quest orientation	Aspiring beauty/ Insight	Conscious interactions	Compassion/ Generosity	Transcendence conviction	Life satisfaction
All schools	Mean	36.43	51.96	64.22	73.81	67.85	53.31	78.49
	SD	22.79	23.82	19.39	18.48	21.38	23.50	12.44
Waldorf schools	Mean	31.79	58.25	65.75	74.00	66.75	59.92	78.22
	SD	20.94	23.48	19.62	20.72	24.83	24.51	13.68
Christian schools	Mean	43.85	51.91	65.40	73.26	69.10	54.47	79.22
	SD	22.82	22.67	17.42	18.34	20.00	20.67	11.80
Public schools	Mean	32.07	45.96	61.35	74.29	67.42	45.57	77.89
	SD	22.27	24.04	21.13	16.34	19.31	23.60	11.95
F value		17.8	11.2	2.7	0.2	0.6	16.4	0.6
P value		<0.0001	<0.0001	0.069	n.s.	n.s.	<0.0001	n.s.

Table 2: Self-centeredness, ideals of helpfulness and responsibility for society

		Self-centeredness [score 0-2]	Feeling responsible for moral development of society [score 0-4]	Cling to the ideal of helping others [score 0-4]	Volunteering to work for others [score 0-4]
All	Mean	0.98	1.90	2.42	2.01
	SD	0.92	1.15	1.08	1.39
Sex					
Female	Mean	0.84	1.86	2.54	2.14
	SD	0.90	1.15	1.03	1.37
Male	Mean	1.14	1.94	2.29	1.87
	SD	0.92	1.16	1.12	1.41
F value		13.9	0.8	6.9	3.5
P value		<0.0001	n.s.	0.015	0.061
School types					
Waldorf schools	Mean	0.87	2.09	2.44	1.86
	SD	0.93	1.17	1.09	1.33
Christian schools	Mean	1.00	1.82	2.49	2.08
	SD	0.92	1.11	1.05	1.39
Public schools	Mean	1.06	1.78	2.30	2.06
	SD	0.91	1.19	1.11	1.48
F value		1.7	3.2	1.1	0.9
P value		n.s.	0.044	n.s.	n.s.

Table 3: Covariates and interactions (GLM univariate, between subject effects)

Dependent variables	Independent variables	F value	P value
Self-centeredness	Sex	5.197	0.023 ¹
	Religious affiliation	2.309	0.076
	Family status	1.724	n.s.
	School	1.803	n.s.
	<i>Significant interactions:</i> Sex * Religious affiliation	2.135	0.095
Feeling responsible for moral development of society	Sex	0.156	n.s.
	Religious affiliation	0.707	n.s.
	Family status	0.491	n.s.
	School	0.151	n.s.
	<i>Significant interactions:</i> School * Religious affiliation * Sex	3.494	0.008
	Family status * Religious affiliation * Sex	2.522	0.041
	Sex * Religious affiliation	2.352	0.072
School * Religious affiliation * Family status	1.943	0.086	
Clinging to the ideal of helping others	Sex	0.470	n.s.
	Religious affiliation	1.636	n.s.
	Family status	1.346	n.s.
	School	0.465	n.s.
	<i>Significant interactions:</i> School * Religious affiliation * Family status	3.507	0.004
	Religious affiliation * School	2.632	0.016
	Gender * Religious affiliation * School * Family status	3.653	0.013

¹ Levene's test for equality of variances was significant and thus the level of significance should be $p < 0.01$.

Table 4: Correlation analyses

	Self-centeredness	Responsible for moral development of society	Clinging to the ideal of helping others	Volunteering to work for others
Self-centeredness	1.000			
M1 Responsible for moral development of society	-.123**	1.000		
T4 Clinging to the ideal of helping others	-.207**	.279**	1.000	
S25 Volunteering to work for others	-.163**	.195**	.256**	1.000
T1 Pity does not fit into modern society	.124**	.031	.013	-.071
T2 Pity prevents others from taking the initiative themselves	.261**	-.041	-.035	-.107
U3 Everything in life boils down to the well-being of yourself (eudemonism)	.384**	-.087	-.129**	-.112
Aspects of spirituality				
Prayer/Trust in God	-.038	.178**	.192**	.300**
Quest orientation	-.213**	.296**	.279**	.213**
Aspiring beauty/Insight	-.111	.319**	.209**	.165**
Conscious interactions	-.160**	.131**	.228**	.262**
Compassion/Generosity	-.248**	.272**	.304**	.328**
Transcendence conviction	-.184**	.205**	.279**	.179**
Life satisfaction	-.086	-.015	-.034	.193**
Sum scores				

** p<0.01 (Spearman rho, 2-tailed)

Table 5: Predictor analysis (stepwise regression model)

Dependent variable	Predictors *	R ²	Beta	T	Sign.
Self-centeredness	(Constant)	.211		5.772	.000
	U3 Eudemonism		.288	5.870	.000
	Satisfaction with school situation		-.161	-3.490	.001
	Compassion/Generosity		-.099	-1.947	.052
	T2 Pity prevents others from taking the initiative themselves		.128	2.680	.008
	Quest orientation		-.111	-2.163	.031
Clinging to the ideal of helping others	(Constant)	.195		6.037	.000
	Compassion/Generosity		.176	3.286	.001
	M1 Responsible for moral development of society		.191	3.827	.000
	S25 Volunteering to work for others		.144	2.934	.004
	Quest orientation		.125	2.426	.016
Responsible for moral development of society	(Constant)	.180		1.054	.292
	Compassion/Generosity		.197	3.755	.000
	T4 Ideal of helping others		.204	4.068	.000
	Quest orientation		.165	3.204	.001
Volunteering to work for others	(Constant)	.218		-2.644	.009
	Compassion/Generosity		.220	4.508	.000
	Religious orientation		.230	4.930	.000
	Satisfaction with school situation		.167	3.660	.000
	T4 Ideal of helping others		.148	3.052	.002

* Only the strongest prediction model was presented (excluded variables: school types, sex).

Table 6: Correlation between self-centeredness and other variables with respect to school type

Self-centeredness	Waldorf schools	Christian schools	Public schools
M1 Responsible for moral development of society	-.032	-.181	-.123
T4 Clinging to the ideal of helping others	-.249**	-.144	-.116
S25 Volunteering to work for others	-.333**	-.169	-.090
T1 Pity does not fit into modern society	.143	.141	.087
T2 Pity prevents others from taking the initiative themselves	.330**	.259**	.192
U3 Everything in life boils down to the well-being of yourself (eudemonism)	.520**	.329**	.251**
Aspects of spirituality			
Prayer/Trust in God	.004	-.047	-.137
Quest orientation	-.275**	-.187**	-.159
Aspiring beauty/Insight	-.137	-.149	-.033
Conscious interactions	-.260**	-.051	-.177
Compassion/Generosity	-.378**	-.180	-.179
Transcendence conviction	-.328**	-.079	-.112
Life satisfaction			
Sum scores	-.087	-.053	-.123

** $p < 0.01$ (Spearman rho, 2-tailed)