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Sustainability Culture, Environmental Activism and Political Ideology Among Young Adults: A Survey on Students at the University of Ferrara

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Abstract. The 2018/2019 climate mobilisation have vigorously questioned the consensus about the sustainability paradigm that has been hegemonic since the 1980, politicising the environmental issue in the public debate, and representing a 'political epiphany' for an entire generation. How has this movement influenced young people's interest for environmental issues, what is the extent and type of their environmental concern, what are their cognitive interpretations of the ecological crisis and solutions to it, and how they relate to environmental mobilisations? This article aims to address these questions by means of a survey distributed to students at the University of Ferrara (1005 responses), relating these factors to political ideology. It finds that young adults are extremely concerned about the ecological crisis. A majoritarian belief can be discerned that structural solutions are deemed as required, such as prioritising environmental protection even at the cost of economic growth, transforming the mode of production and consumption, and reducing social inequalities. Furthermore, while climate sceptical positions are by far marginal, there is a widespread critical position towards the capability of science and technological innovation to tackle the climate crisis, and a sweeping belief of the necessity of individual lifestyle changes. With the notable exception of the latter two, all these beliefs are correlated with political ideology, showing the importance of political positioning vis-à-vis the environmental question. Finally, a broad feeling of hopelessness and 'agencylessness' towards the future can be discerned, with a low confidence about the transformative role of social movements vis-à-vis the ecological transition, which is however balanced by two fifth of students mobilising in environmental protest.

Keywords: environmental concern, young adults, environmental activism, social movements, political ideology.

1. INTRODUCTION

The new climate movements that emerged since 2018/2019 have represented the birth of a new wave of environmental mobilisations. The rapid emergence of the Fridays for Future (FFF) movement inspired by Swedish activist Greta Thunberg's school climate strikes combined with the rise of other transnational environmental groups such as Extinction Rebellion and nationally-based movements such as the Gilets Jaunes in France and the Sun-

rise Movement in the USA have constituted a new cycle of environmental activism which is unprecedented in its global reach. With the pandemic, the movement entered into a latency phase, however subsequently regaining visibility with the emergence of spin-off climate groups such as Last Generation and End Fossil, which entered universities by claiming for the rejection of funding from oil multinational corporations, and by building coalitions with the workers struggles and with the feminist movement in some countries. In addition to the capability to mobilise people without previous activism – especially many school and university students– these movements display a powerful return to state-addressing forms of political claims, despite the low confidence in governments' ability to address the climate issue (de Moor *et al.* 2020).

Given that school and university students make up the bulk of participants, following political socialisation studies, we could expect these movements to represent a «political epiphany for an entire generation» (Boulianne and Ohme 2022: 772), a vector of youth politicisation, impacting young adults' framing of the environmental crisis, with profound and lasting effects on identity formation processes, and on how new generations perceive their "agency" in the political system (Boulianne and Ohme 2021: 772; De Moor *et al.* 2020; Wahlström *et al.* 2019). For example, studies on high school pupils (D'Uggento *et al.* 2023) have shown that, in the months following the FFF mobilisation peak (February 2020), students believed that climate movements could help effectively combat climate change by exerting an influence on policymakers.

In the constellation of the "multiple crises", a deadlock in international environmental governance and politics (Swyngedouw 2022) or a "crisis of crisis management" (Brand and Wissen 2012) is increasingly apparent. Despite scientific consensus about the anthropogenic nature of climate change and its intimate relationship with fossil-based, consumer (capitalist) economy, the continuous erosion of climate parameters (IPCC 2023) and the appalling insufficiency of countries' mitigation commitments to reach the Paris Agreement objective of 1.5°C temperature increase, and despite robust evidence that decoupling economic growth and resource consumption/environmental degradation is unfeasible on a global scale (Hickel and Kallis 2020; Wiedenhofer *et al.* 2020; Haberl *et al.* 2020), the sustainability paradigm has maintained its hegemony since the 1980s in international governance, policy, and institutions, purporting to harmonise economic growth, social welfare, and environmental protection (Asara *et al.* 2020; Blühdorn 2022). Through its various reincarnations in akin concepts such as sustainable development, green growth, and green economy, eco-politics has been reduced to a techno-managerial issue – built around the unquestioned imperative of economic growth – which can be solved by technological solutions and market mechanisms (Pellizzoni *et al.* 2022), by means of a displacement (or denial) of the real socio-ecological processes (Swyngedouw 2022) that drive the socio-ecological crisis.

Within this framework, the focus and responsibility for the "ecological transition" are shifted from national state regulation and public planning to individuals, civil society, and private initiatives which have to internalise the necessary environmental behaviour (Gómez-Baggethun and Naredo 2015; Thörn and Svenberg 2016) – understood mainly in consumption terms and according to market and efficiency rationalities – and become resilient to cope with social and environmental catastrophes that are increasingly perceived as unavoidable (Blühdorn 2022). By turning ecological limits into an opportunity for market-led valorisation, the ecological transition is thus transformed into a "new orthodoxy" (Brand 2016), slipping into a post-democratic governance built around consensual governing and a mainstreamed environmental discourse that attempts to erase social antagonism (Pellizzoni *et al.* 2022). But is the environment a consensual, non-divisive issue, beyond political viewpoints and ideological differences?

One could argue that it is this alleged consensus that the (not-so-new anymore) youth climate movements seem to have questioned. As Greta Thunberg declared at the UN Climate Action Week in September 2019: «how dare you pretend that this can be solved with just BAU and some technical solutions». A way out of the crisis thus lies with "system change not climate change" – to put it with a climate justice slogan. As she reiterated at the Youth4Climate meeting in Milan in September 2021,

> *the climate crisis is of course only a symptom of a much larger crisis – the sustainability crisis, the social crisis – a crisis of inequality that dates back to colonialism and beyond – a crisis based on the idea that some people are worth more than others and therefore have a right to exploit and steal other people's land and resources – and it is very naive to believe that we can solve this crisis without confronting the roots of it.*

This new wave of climate activism has put forth a vigorous critique of institutional "environmental" politics and governance and of the paradigm of sustainability, contending that the UNFCCC institutional framework is not effectively dealing with the climate crisis.

While trust in the capacity of institutions, from local to national and international (EU and UNFCCC)

levels to deal with environmental problems seems quite bleak (De Moor *et al.* 2020), some fundamental cleavages at the core of sustainability debates – such as the role of economic growth, technological innovations, social inequalities/justice, and the transformation of the mode of production and consumption – which were previously relegated in the climate justice radical flank of the climate movement, have acquired renewed importance in the discourses and frames of the new movement (De Moor 2018), permeating discourses in the media, with effects on public opinion (Fritz *et al.* 2023; Scruggs and Benegal 2012). For instance, a recent study (Fritz *et al.* 2023) found that the FFF movement and Greta Thunberg positively influenced the environmental concern and behaviour of Swiss residents.

In this article, we aim to understand beliefs related to the environmental problem, solutions to it, and the ecological transition process among "educated" youth, as represented by university students, focusing on: a) what are the issues of environmental concern and its extent, b) how do they interpret the ecological crisis and what do they see as possible solutions, e.g. scrutinising the perceived role of social inequalities, economic growth, science and technology, and on changes to lifestyles and the mode of production and consumption; c) the extent of their environmental activism, beliefs on their agency and level of confidence on the role of social movements for tackling climate change; d) how are all these factors related to political ideology.

We investigate these questions by means of a survey carried out through an online questionnaire sent to the entire student population of the University of Ferrara. The analysis undertaken is mostly of a descriptive kind, aiming to provide a discussion of these cognitive beliefs and how they relate to political positionings. We are aware that the descriptive bent can represent a limit, but it is a first necessary step that allows us to offer a general understanding and overview of the research results, so as to later deepen specific issues in a more sophisticated manner.

The rest of this paper first reviews the literature on environmental attitudes and behaviour, identifying some key findings as well as research gaps that emerged in this body of work; then research methods are briefly explained, followed by a description of the main findings, which are discussed in the last section.

2. ENVIRONMENTAL CONCERN, ITS DETERMINANTS AND CONSEQUENTS

Literature on environmental attitudes and concerns has garnered a conspicuous amount of scholarly attention over the past half century, and increasingly so since the 1990s, involving an interdisciplinary field comprising sociology, psychology, political science, anthropology, and communication (Cruz 2017; Telesiene and Hadler 2023). According to a recent survey of the literature covering environmental attitudes and behaviour (Telesiene and Hadler 2023), since 2000s the field has been slowly witnessing a relative increase in the use of sociopsychological (individual) level constructs and behavioural variables, typical of psychology studies, as compared to sociostructural variables. The New Ecological Paradigm, originally proposed as New Environmental Paradigm in late 1970s by Dunlap and van Liere (1978; see also Dunlap *et al.* 2000), is the most employed theoretical approach within this field. The central thrust behind this framework was the idea that environmentalism implied a challenge to fundamental views about nature and humans' relationship to it, thus attempting to carve out "primitive beliefs'" about the nature of the earth and humanity's relationship with it" (Dunlap *et al.* 2000). One of the most cited definitions of Environmental Concern (EC) is provided by NEP scholars (Dunlap and Jones 2002: 485), who define it as «the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution».

The other two most popular theories within the field of environmental attitudes and concern are the Theory of Planned Behaviour (TPB) and the Theory of reasoned action (TRA). These have offered behaviour models that can be utilized for explaining the reasons of pro-environmental intentions – such as willingness to pay – and behaviour (EB) such as green consumerism and lifestyles, providing a rational-choice account of behaviour as the result of individual attitudes, social norms, intentions and evaluation of its consequences (Ajzen and Fishbein 1980; Ajzen 1991; Suarez *et al.* 2021).

Research in this field has followed two main routes: on the one hand, a considerable amount of work has focused on the determinants of environmental concern (Arshad *et al.* 2020; Cruz 2017; Liu, Vedlitz and Shi 2014; Post and Meng 2018) while another large corpus of literature has addressed the consequents of EC, that is pro-environmental behavior (Calculli *et al.* 2021; Chuvieco *et al.* 2018; Fielding and Head 2012; Rampedi and Ifegbesan 2022; Suárez-Perales *et al.* 2021; Tezel, Ugural and Giritli 2018). In the first body of studies, three main factors at the individual level have been analysed as determinants of EC: worldviews and values about human-nature relationships, sociodemographics, and political orientations (Liu, Vedlitz and Shi 2014). These will be deepened in the next section.

2.1. Determinants of EC

The NEP scale has been the most popular measurement of ecological worldviews and EC, focusing on beliefs about human capacity and right to upset the balance of nature and rule over it, and the existence of limits to growth. According to this framework, EC is a multifaceted construct consisting of two conceptual components: the environmental – the substantive content of EC, operationalised by a set of environmental issues such as pollution, biodiversity or climate change – and the concern component, which can be expressed by attitudes, beliefs, intentions, and behaviours (Dunlap and Jones 2002). It includes a set of questions, which have later been updated by their proponents, as well as revised in a shortened version by many researchers (Dunlap *et al.* 2000; Liu *et al.* 2014). However, it has been subject to criticism for being «overly simplistic and outdated» and for holding «low face validity» (Cruz 2017: 83; Lalonde and Jackson 2002).

Research on sociodemographic determinants of EC has focused on characteristics such as gender differences, age, race/ethnicity, and social class status (as measured by income, education and occupational prestige, see Van Liere and Dunlap 1980). Evidence on these factors is, however, not conclusive. While in general women have been found to hold higher levels of EC than men (Liu, Vedlitz and Shi 2014, exceptions can be found e.g. in Clements 2012), the evidence is mixed with regards to social class status – although education generally plays a positive role for EC (Clements 2012; Fielding and Head 2012; Chuvieco *et al.* 2018; Post and Meng 2018; Rampedi and Ifegbesan 2022) – and for race/ethnicity (Clements 2012; Liu, Vedlitz and Shi 2014). With regards to age, a majority of studies has found youth to display greater environmental concern than adults and lower levels of climate scepticism (Valdez, Peterson and Stevenson 2018; Liu, Vedlitz and Shi 2014), apart from a few exceptions (Partridge 2008). This has been explained by youth's lower integration in the dominant economic system (Van Liere and Dunlap 1980), generational changes and experience (*Ibidem*; Kanagy *et al.* 1994) and higher education about environmental issues (Howell and Laska 1992).

Research on the third set of determinants of EC, i.e. political orientation, has increasingly demonstrated the partisan and ideological divisions underneath public perceptions on environmental matters. Political ideology describes the political position one falls on the spectrum of political beliefs, ranging from left to right, while political partisanship or political party affiliation refers to the major political party with which someone identifies (Cruz 2017). Political ideology has a multidimensional nature, comprising values and beliefs around issues of social order, stratification, and the role of business and government. For example, the range of ideological dimensions have included support for welfare-state policies, civil liberties and social justice, regulatory laissez-faire or policies, business interests, social stability and traditional values (Dunlap, Xiao and McCright 2001). While some early studies conducted in the USA in the 1970s reported little if any relationship between ideological preferences/political partisanship and environmental attitudes among the general public (Buttel and Flinn 1974; Buttel and Johnson 1977; Mazmanian and Sabatier 1981), this has been attributed to environmentalism starting out as a consensual issue partly because much of the country's landmark environmental legislation was promulgated during the Republican Nixon and Ford administration with considerable bipartisan support (Dunlap *et al.* 2001). While a few other early studies casted doubt on this consensual finding, even for the USA (Cruz 2017), it is later literature that has set the ground for the general consistency of the statistically significant relationship (p=.005) between political ideology/party affiliation and environmental concern, at least in developed, capitalist nations (*Ibidem*; Nawrotzki 2012; Fobissie 2019; Davidovic *et al.* 2020). However, while the great majority of studies has been conducted in the USA, those focusing on beliefs about solutions to the ecological crisis are relegated to a few national case studies (Dunlap *et al.* 2001; Nawrotzki 2012; Taniguchi, Aldikacti and Marshall 2018). Furthermore, as explained in the next section, the great majority of ideology studies has focuses on environmental intention and (individual) behaviour, rather than collective action/environmental activism. It would be thus salient to understand how these factors relate with political ideology.

2.2. Consequents of EC: pro-environmental behaviour and collective action

A second body of work within literature on environmental attitudes and concern has focused on the consequents of EC, that is pro-environmental behaviour (PEB) and intentions. EC (and environmental knowledge) was originally considered as a powerful determinant of PEB and/or PEB intentions (Tezel *et al.* 2018), most notably in psychology-driven TRA and TPB models; however, such a linear relationship was increasingly questioned by a few studies, that highlighted that more environmental concern did not translate automatically into PEB due, for instance, to cultural differences (Kollmus and Agyeman 2002).

Only a minority of studies has focused on collective and public action rather than individual pro-environmental behaviour, scrutinising the role of intervening variables such as the self-perceived political efficacy of political action, institutional and generalised trust or the influence of sources of information such as education in universities and schools or of mainstream and social media as drivers of environmental activism (Hickman *et al.* 2021; Besel, Burke and Christos 2015; Boulianne and Ohme 2022; Feldman *et al.* 2017; Mudaliar, McElroy and Brenner 2022). Within this subset of literature, a few studies have underlined that EC does not translate in environmental political action: most young adults engage in individual, everyday, short-term action, such as green consumerism, eschewing political activities (Gallagher and Cattelino 2020; Harris, Wyn and Younes 2010; Mudaliar *et al.* 2022). This is due to several interconnected factors: a general sense of disillusionment with politics, distrust with the possibility and political efficacy of political action, and the individualisation of responsibility typical of neoliberal environmental governance (Gómez-Baggethun and Naredo 2015; van Meer and Zografos 2024; Thörn and Svenberg 2016). Young people are thus pushed out of traditional politics while being pulled in by political consumerism, due to higher perceived internal political efficacy of the latter linked to a distrust of institutional political actors (Kyroglou and Henn 2022).

Studies on the FFF movement conducted in the aftermath of mobilisations have found a positive impact of the movement on the general public's environmental concern and behaviour, on willingness to engage in climate activism as well as on discourses (Venghaus *et al.* 2022; Blühdorn and Deflorian 2021), due to a positive evaluation and trust in the potential of environmental movements, and more particularly of the FFF movement and Greta Thunberg, which acted as an inspiring leverage for mobilisation (De Moor *et al.* 2020; Fritze *et al.* 2023). However, it is unclear whether these evaluations and impact are enduring 5 years after the peak of mobilisations, following the reduction of the movement's visibility in the media. In addition, the contextual conjuncture has much changed since then, with new intersecting crises coming in – pandemic, geopolitical and energy crisis, and new wars bordering the European and Mediterranean areas. For example, according to a study, this has led to the importance of a "climate peace" approach in young people's environmental activism, featuring a focus on climate justice and claims for systemic change (Bowman and Pickard 2021).

In this article we aim to analyse two sets of different questions. On the one hand, the extent and type of environmental concern on the part of university students and their cognitive beliefs about solutions to the crisis and their relationships with between political ideology. On the other hand, we aim to find out what is the extent of environmental activism, students' perceived influence upon the process of ecological transition and the confidence they place upon social movements to counter the climate crisis, and impact Greta Thunberg exerted on their interest in climate change. Our hypothesis is that political ideology not only is correlated with young adults' environmental concern, but also to perceived solutions to the climate crisis and transformative potential of movements, and to political participation.

3. METHODS

This paper uses survey data collected from end of October 2023 to January 2024. The online survey was sent via email to all university students enrolled in 3-year Bachelor's degrees (Laurea Triennale), 2-year-Master's degrees (Laurea magistrale) and 5-year-single cycle degrees, comprising a total of 30,600 students. A total of 1005 online questionnaires were collected of which 710 were fully completed. While our sample has the traditional limitation of self-selection of responses, thus failing to meet the requirement of data generalisability, the results can be valuable for their sociological interest given the breadth of the sample and the fair distribution among the three disciplinary areas of reference of the entire education offer: health, scientific-technological and humanistic-social disciplines covered respectively 35%, 29.3% and 35.7% of the total number of participating students. As far as course type is concerned, the majority of respondents falls into the three-year bachelor's degree category (50%), 15.3% of respondents attend (2-year) master's degrees, and 34.7% of students are enrolled in (5-year) single-cycle degree courses. In terms of gender, we have a marked preponderance of female students (73.8%) compared to male students (26.2%). This gender asymmetry of the self-selected sample is in line with other research carried out at the university. In terms of age, almost 78% of students fall within the 2000-2005 age group. The questionnaire is composed of 38 questions, many of which are constituted of several sub-questions, but for this study we will be drawing only on a subset of questions.

4. RESULTS

4.1. Descriptive statistics

Respondents were asked to rate their level of concern for five specific environmental issues (biodiversity

loss, climate change, pollution, deforestation, and land consumption) using a scale from 1 to 5: not at all, a little, a moderate amount, a lot, a great deal. Tab. 1 shows that the majority of students report high and very high levels of EC. Multiple response items on ecological concerns show that, considering the ensemble of 5 environmental problems, 71.2% of students reported high or very high levels of concern at least for one item. The results also show that pollution and climate change are by far the environmental problems that arouse the highest concern, with 86.2% and 83.4% of respondents being either highly or very highly concerned and only 1.9% and 3.4% of students being little or not at all concerned. The environmental issues that show the highest environmental concern, following the climate change and pollution items, are, in descending order, deforestation (72% of high and very high concern), biodiversity loss (63.2% of high and very high concern), and, lastly, land consumption (51.3% of high and very high concern). It is apparent that environmental problems displaying strongest concern (climate change, deforestation and pollution) are those topics gaining most media attention, but those harnessing less concern still arouse important apprehension.

The results of the climate change concern question combine well with those of two other statements (Tab. 2). On the one hand, the great majority of students (84.3% of respondents) rejects the statement (S1) that "climate change has been exaggerated by environmentalists and scientists", with only 4.5% of students strongly and greatly agreeing with this thesis. This reinforces the argument that the climate crisis is an issue of high concern and taken very seriously, showing an attitude of confidence towards scientific evidence about climate change. On the other hand, this confidence about the seriousness of the climate crisis is associated with some sense of hopelessness about the prospects of climate change mitigation (which might explain students' strong concerns). Indeed, a significant part of students (38.7%) does not agree or shows little support for the statement (S2) that "C02 emissions have reached such a level that we cannot reduce them in an efficacious manner but can only adapt to the state of being", 23.7% of them strongly or greatly agree with this statement, and 37.6% moderately agree with it, thus showing a majority of young adults (61.3%) being somewhat disillusioned and resigned about having to simply adapt with the scenario of a climate-altered world.

A subset of six questions dealt with cognitive interpretations of the ecological crisis and potential solutions to it, asking how much students agree with a series of statements (Table. 3). Two of them were partly inspired by

Table 1. Environmental concern.

	Not at all, a little	*A moderate amount*	*A lot, a great deal*
Biodiversity loss	7,2	29,7	63,1
Climate change	3,4	13,2	83.4
Pollution	1,9	11,9	86,2
Deforestation	4,9	23,1	72,0
Land consumption	17,5	31,2	51,3

Valid cases: 833.

Table 2. Climate scepticism and prospects for climate mitigation.

	Agreement		
	Not at all, a little	*Moderate amount*	*A lot, a great deal*
Climate scepticism (S1)	84,3	11,2	4,5
Climate adaptation (S2)	38,7	37,6	23,7

Valid cases: 833.

NEP modified scale (La Trobe and Acott 2000; Dunlap *et al.* 2000; Liu *et al.* 2014; Clements 2012) and asked the level of agreement on two statements: "it is necessary to give priority to environmental protection, even at the cost of reducing economic growth/production and consumption levels" (S3); "science and technological innovation will be able to solve the effects of climate change" (S4). A third statement investigates attitudes towards Artificial Intelligence, asking to provide one's opinion on whether "AI offers high potential to tackle the environmental crisis" (S5). The other three questions asked the level of agreement with a series of statements about actions that are necessary to pursue if the ecological crisis is to be tackled seriously: "to reduce social inequalities" (S6); "to transform the mode of production and consumption" (S7); "to change lifestyles and behaviours" (S8).

It is noteworthy that the two items gathering the most agreement as potential solutions to tackle the ecological crisis (around 87% answered agreed "a lot" and "a great deal", with less than 2% of students disagreeing) are statements about the necessity to transform the mode of production and consumption (S7) and to change lifestyles and behaviours (S8). If we consider these beliefs in pair with the following statement receiving most agreement (66,5% of strong and very strong agreement, and only 5.4% of disagreement), we can deduce that the majority of students believe that solutions to the ecological crisis should involve both a structural transformation of the growth-oriented economic

Table 3. Actions to solve the ecological crisis.

	Agreement		
	Not at all, a little	*Moderate amount*	*A lot, a great deal*
Prioritisation of environmental protection (S3)	5.4	28.1	66.5
Science and technological innovation (S4)	21,9	45,8	32,3
Artificial Intelligence (S5)	37,1	44,9	18
Reduction of social inequalities (S6)	15,4	29	55,6
Transformation of the mode of production and consumption (S7)	1,2	11,7	87,1
Change of lifestyles and behaviours (S8)	1,8	10,6	87,6

Valid cases: 820.

model and changes at the individual level of lifestyle behaviour. For slightly more than half of students, a major component of these transformations should also involve the reduction of social inequalities as part and parcel of the ecological transition (S6), thus revealing the importance of a social justice approach as inextricably linked to environmental outcomes (climate justice). The role of science and technological innovation is instead ambivalent, as only 32.3% of students perceive them as solutions able to tackle the climate crisis, against 21.9% of students perceiving them as of little or no relevance, with the majority of students located in a middle-ground position (S4). Such ambivalence turns into an even more critical position and diffidence towards technocratic solutions when AI is called into question (S5), as only 18% of students strongly/very strongly agree that such a technological innovation offers a viable solution to the environmental crisis.

Finally, we have scrutinised students' perceptions of their influence on the ecological transition process and the extent of their political participation in environmental protests. Only 11.9% of respondents believe they have a lot or a great deal of influence on the ecological transition process, while more than half of them (53.1%) perceive they have no or little influence upon it, and around one third (35%) of respondents believe they have a fair amount of influence (valid cases: 754). Furthermore, 36.6% of students have not at all or little confidence in the capability of social movements to tackle climate change, and only 25.9% have high and very high confidence in their potential for climate change mitigation.

Despite these figures, which reveal a picture of considerable perceived "agencylessness" on the part of students, two-fifths of students (38.55%) have participated in at least one environmental protest or demonstration in the last five years, showing that a conspicuous part mobilises notwithstanding the low confidence in the transformative potential of collective action. It is noteworthy that only 22.1% of students assert that Greta Thunberg exerted "a lot" or "a great deal" of influence on their interest in climate-related issues, while more than half of students (51.2%) declare she had no or little influence, and 26.7% of students declare a fair amount of influence.

In the next section, we will look at the role of political ideology, measured on a scale from 0 (extreme left) to 10 (extreme right), which will be analysed by different tables of contingency with a high level of correlation between the variables (99% of significance).

4.2. The role of political ideology

In line with many studies' findings on the determinants of EC (see section 2.1), our study shows that political ideology is correlated with all types of environmental concern, with those on the left side of the political spectrum showing higher levels of EC. However, the correlation sociologically holds little significance because the great majority of the sample is (very) strongly concerned about environmental issues, beyond ideological positions. Only for one type of environmental issue, land consumption, the correlation is sociologically relevant because, in this case, EC displays a consistent quota of people with low and moderate levels of concern: 62% of students self-declaring as either left or centre-left are a lot or greatly concerned about land consumption, as compared to only 37.2% of students with right and centre-right political positions (Fig. 1). Conversely, only 12.1% of the former group is not at all or little concerned about land consumption, as compared to 28.3% of students belonging to the latter group.

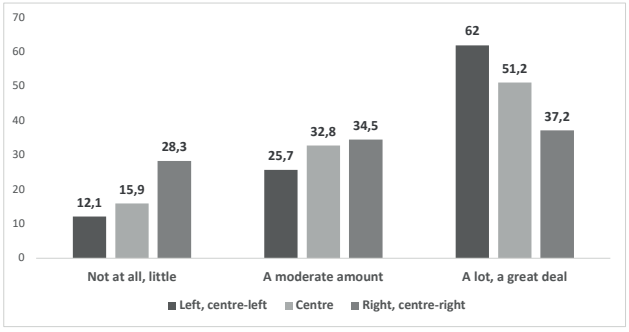

Figure 1. Contingency table of land consumption by political ideology. *Valid cases: 559 (p=0.005).*

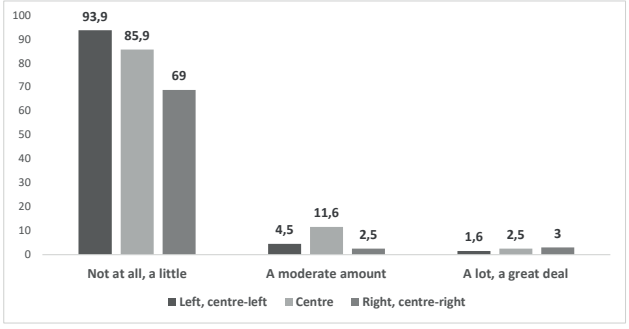

Figure 2. Contingency table of climate scepticism (S1) by political ideology. *Valid cases 557 (p=0.005).*

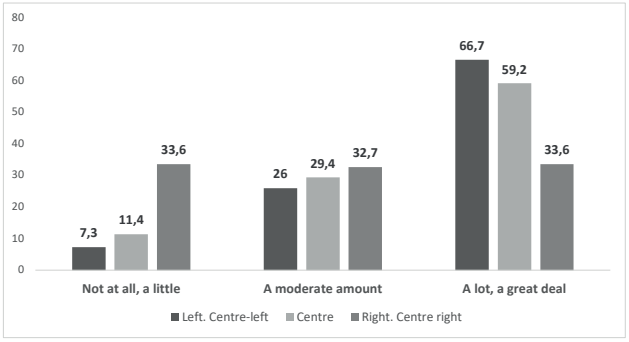

Figure 3. Contingency table of necessity of reduction of social inequalities (S6) by political ideology. *Valid cases: 559(p=0.005).*

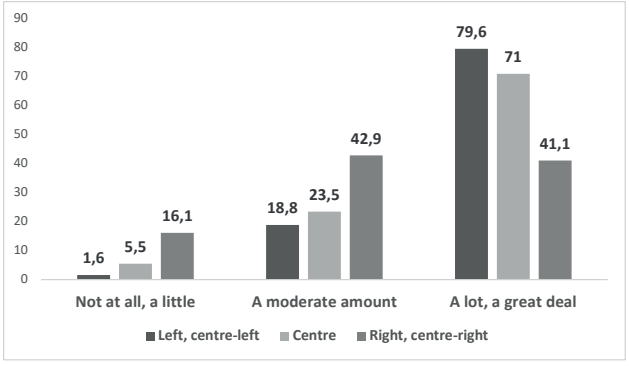

Figure 4. Contingency table of prioritisation of environmental protection (S3) by political ideology. *Valid cases: 557 (p=0.005).*

Furthermore, within a general non-sceptical orientation (S1), leftist students display a relatively higher level of strong/very strong disagreement with the climate scepticism hypothesis (93.9% of them strongly/very strongly disagree), as compared to rightist students (69%) (Fig. 2).

With regards to actions and solutions to tackle the climate/ecological crisis, our study confirms what might seem intuitive, i.e. political ideology is correlated with the belief that social inequalities should be reduced if the ecological crisis is to be tackled seriously (S6): two thirds of students self-positioned on the left side of the political spectrum declare high/very high levels of agreement as compared to only one-third of students located on the right side of the political spectrum (Fig. 3).

A similar correlation is also found between the perceived necessity of giving priority to environmental protection (even at the cost of economic growth) and political ideology (fig. 4). In this case, our sample shows that the leftist group is more inclined to prioritise environmental protection than the rightist group (79,6% vs. 41,1%) (Fig. 4).

Instead, with regards to the necessity to transform the mode of consumption and production (S7), while there is a significant correlation, implying that there is a higher agreement on the part of centre-leftist and leftist students, it is noteworthy that the share of rightist and centre-rightist students which are highly favourable to transform the mode of production and consumption is nonetheless substantial (77.9%) (fig. 5).

What is interesting is that the change in lifestyle and behaviours (S8) as a solution to the climate crisis is not correlated with political ideology, as it emerges as a transversal belief across ideological positions. Other two variables are not correlated with political ideology: the perceived confidence to mitigate climate change (S2), which is homogenously distributed across political partisanship, and the confidence in the capability of science and technological innovation to solve the effects of climate change (S4). While prospects about the possibility of curbing global warming rest beyond ideological divisions, political orientation does correlate, although not strongly, with the perceived influence exerted upon the ecological transition process (Fig. 6): 62.7% of rightist students believe they have little or no influence on the

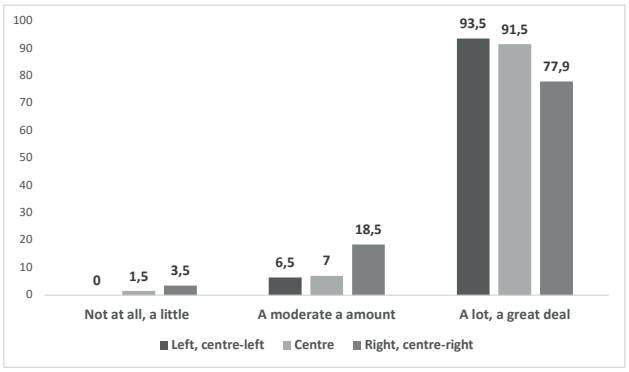

Figure 5. Contingency table of transformation of the mode of production and consumption (S7) by political ideology. *Valid cases: 558 (p=0.005).*

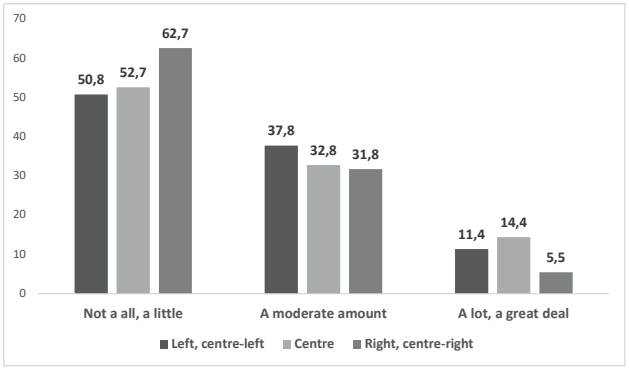

Figure 6. Contingency table of perceived influence upon the ecological transition process by political ideology. *Valid cases: 557 (p=0.005).*

process of ecological transition, as compared to 50.8% of leftist students.

Finally, political participation and confidence in the role of social movements are examined. Participation in environmental protests is correlated with political ideology. In the below table of contingency, we can observe that 47.5% of leftist students have participated in at least one protest in the last five years, as compared to only 27% of rightist students. Leftist students also display higher levels of confidence in the capability of social movements to tackle climate change (Fig. 8), with almost a third of leftist students (30.6%) declaring a lot/a great deal of confidence in the potential of social movements, as compared to only 15.3% of rightist students. Lastly, as expected, the influence Greta Thunberg played on students' interest in climate-related issues also varies according to political positioning (Fig. 9), as 28.5% of leftist students declared she had a strong/very strong influence (against 40.7% declaring no/little influence) as

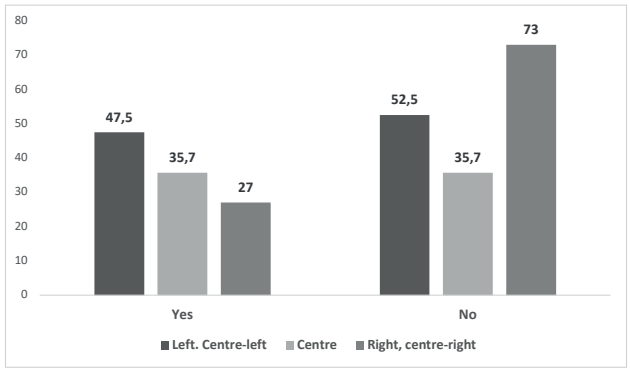

Figure 7. Contingency table of participation in environmental protest by political ideology**.** *Valid cases: 559 (p=0.005).*

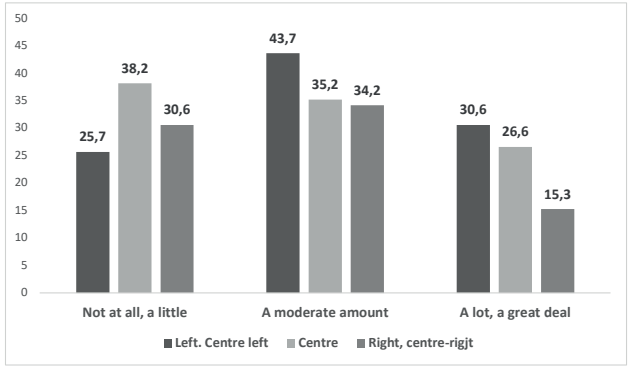

Figure 8. Contingency table of confidence in the potential of social movements by political ideology**.** *Valid cases: 555 (p=0.005).*

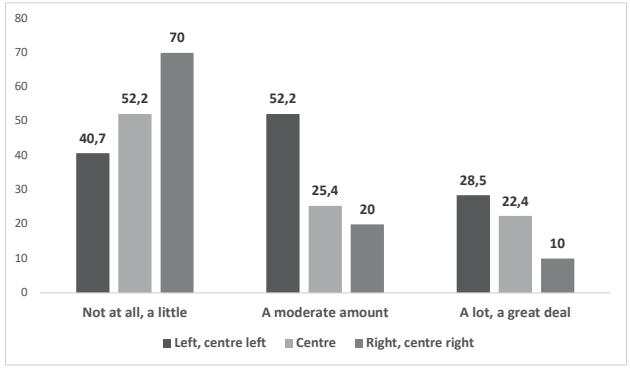

Figure 9. Contingency table of Greta Thunberg's influence on climate-related issues by political ideology. *Valid cases: 556.(p=0.005).*

compared to 10% of rightist students declaring so (and a sweeping 70% of rightist students claiming no or little influence).

5. DISCUSSION AND CONCLUSIONS

Young adults are strongly concerned about the ecological crisis, especially about issues that are in the spotlight in the media debate, i.e. climate change, pollution, and deforestation. Within this widespread strong concern for environmental issues, which is corroborated by the very low levels of climate scepticism, we can discern a correlation effect with political ideology, which is sociologically relevant, nonetheless, only for land consumption, whose levels of low/moderate concern are not insignificant.

There is by far a majoritarian belief that for the climate crisis to be tackled, marginal adjustments, or incremental policies and technological solutions will not do: structural solutions are deemed as required, such as prioritising environmental protection at the cost of economic growth, transforming the mode of production and consumption, and – less so, but still important, with two-thirds of strong agreement – reducing social inequalities. All these solutions are ideologically differentiated, especially with regards to the trade-off between economic growth and environmental protection and the social justice/inequalities dimensions, which show high agreement only from 41.1% and 33.6% of rightist students, respectively. However, it is remarkable that even a wide portion of rightist students see a change in the mode of producing and consuming as required (77.9% strongly agree). We could interpret the structural changes in the mode of production and consumption to feature two different visions: a leftist critical viewpoint that envisions systemic changes embedded within a social justice approach, and a rightist vision that aims at structural changes within the existing capitalist market economy, where the reduction of social inequalities is a priority requirement only for around a third of the sample (and another third of students moderately acknowledge it). The rise of inequalities during the neoliberal era has been appalling, and intimately tied to the climate crisis (Oxfam 2022; Chancel *et al.* 2022) – the world's richest 10% are responsible for almost 50% of all emissions (*Ibidem*). The debate on the nexus inequality-climate crisis that has found a place also in mainstream media could potentially explain the recognition by even a minority of rightist students that addressing large inequalities in carbon emissions is essential for tackling climate change.

Furthermore, only a third of students have high confidence in the potential of scientific and technological innovations to solve the effects of the climate crisis (plummeting to 18% when AI is called into question), a somewhat critical stance that, on the one hand, rejects the hypothesis of scientisation (De Moor *et al.* 2020: 26) and, on the other hand, reinforces the interpretation that solutions need to be structural rather than contemplating marginal adjustments by means of technological fixes. Indeed, the science & technology question is one of the two only solutions that are "ideologically neutral". The other solution to the ecological crisis that is not ideologically skewed is the perceived necessity of lifestyle and behaviours changes (S8). This statement, together with the one on the structural transformation of the mode of production and consumption, is the one that receives the most support (87% of strong agreement). How to interpret these findings? We will reflect on this element after having discussed the political participation findings.

It is difficult to note the sweeping feeling of 'agencylessness' towards the future: more than half of students believe that whatever action they undertake, it will have no or little influence upon the ecological transition process, with collective action being valued as politically efficacious only by a quarter of students. This finding stands in contrast with studies undertaken right after the peak of FFF mobilisations (D'Uggento *et al.* 2023; Fritz *et al.* 2023; De Moor *et al.* 2020) and signals a partial shift in FFF perceptions 5 years later, whereby only around a fifth of students have reported an influence exerted by Greta Thunberg and around half declared no or little influence. This widespread hopelessness can also be found in the considerable diffusion of the belief that it may be too late to act to prevent climate mitigation in an efficacious manner, having to live with climate adaptation as a sole strategy (only 38.7% of students do not agree with this statement). While confidence placed in the role of social movements as well as personal agency vis-à-vis the ecological transition process is ideologically skewed towards leftist students, the feeling that climate adaptation is the "only game in town" is homogeneously distributed across ideological positioning.

In this scenario, if political hope is an important condition for social and political engagement (Goldman 2023) – and the perceived effectiveness of the action is a driver of environmental activism (Brunsting and Postmes 2002; Ajzen and Fishbein 1980; Ajzen 1991) – collective action might appear to be at risk. However, despite these challenges, two-fifths of students (38.55%) have taken part in at least one environmental protest in the last five years – not a wide portion but still a considerable one – possibly indicating that evaluation of the consequences of political efficacy is not the sole spur to mobilisations. Who are these politically active students? Although we don't have information on when they did mobilise, e.g. whether this was during the FFF peak of mobilisation, before the waning of their political hope, or whether they protested despite distrust in the possi-

bility of making an impact, of any sort – we know that leftist students are more likely to mobilise and take part to environmental protests, with almost half of them having taken part to an environmental demonstration, as compared to only 27% of rightist students.

Going back to the perceived solutions to the ecological crisis, what is striking is the sweeping belief of the necessity of voluntary lifestyle changes (S8) – beyond ideological positioning – and of the structural transformation of the mode of production and consumption (S7) as key actions to solve the ecological crisis, gathering the most agreement. On the one hand, one could see the role of lifestyle changes as a result in line with studies underlining the prevalence of private, individual pro-environmental behaviour due to a pervasive neoliberal context of individual responsibilisation and a sense of distrust with traditional politics. On the other hand, this interpretation is tempered when combined with cognitive beliefs about the need for structural changes in the mode of production and consumption, for a social justice approach, and a "beyond growth" orientation sceptical of technological fixes.

What this research makes clear is the ideological underpinning of cognitive beliefs about the ecological crisis and solutions to it, and its salience for understanding environmental activism and attitudes around it, rejecting the hegemonic hypothesis that the ecological transition is a consensual, non-divisive issue. Future analyses should deepen the role of institutional trust for environmental activism and visions of ecological transition.

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