

European adolescents awareness from energy supply to life perspectives

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Abstract: Aim of the article is proposing some specific issues about energy supply and present and future life situations in order to observe the opinions and attitudes of the younger generation of Europe. The core of the contribution is a treatment of the question from a sociological perspective and using an extract of data from the recent research called Pact – Pathways for Carbon Transitions (project number 225503) funded by the 7th Framework Programme –, that is a survey completely dedicated to adolescents aged 14-18.

In order to understand the approach to energy transition from a society completely based on fossil energy, and often taken for granted, to one that takes into account alternatives of resources, three aspects will be considered. First, the perception the adolescents have about the ending of the oil as the main energy resource and its potential substitutions. Second, the concrete involvement of fossil fuels and environmental issues in the participants' present and future daily lives. Third, adolescents general approach in terms of risks and values in order to enter their way of thinking and to have a better understanding of the answers obtained to energy and environmental questions from a sociological point of view.

Keywords: adolescents, European research, energy transition, fossil fuel, sociological approach.

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Introduction

The way of production and distribution of energy has become a key issue globally in recent years, but is one that has always presented a contradiction between the well-documented evidence of resource depletion, on which western societies have based their life style consumption, and the treatment of this issue as an environmental one.

In fact, central to this point is about whether or not to take into account the energy topic's political, economical and social implications. The debate not very deeply developed in public in its complexity² and often under an ideological strength³ is not simply about the necessity to rethink globally new ways to create energy, but a more in-depth consideration of the reciprocal relationship between available resources and lifestyles which are taken for granted in western societies

As far as this article is concerned, some specific issues about energy supply and future life situations will be proposed in order to observe the opinions and attitudes of the younger generation of Europe.

The main hypothesis leading to this contribution is that in order to understand the approach to energy question of the adolescents, we need to comprehend their general approach in terms of risks and values, so as to have a contextual understanding of their way of thinking.

The core of this paper is a treatment of the question from a sociological perspective using the recent research called Pact – Pathways for Carbon Transitions (project number 225503) funded by the 7th Framework Programme – part of an European study dedicated to possible solutions regarding the sustainability of future cities and their inhabitants. Sociologically, the research⁴, using a questionnaire, has been dedicated to adolescents aged 14-18 because of the fact that they will be the adults of

² i.e, see European commission report, 2008. Moreover the General Assembly of the United Nation has proclaimed the decade of Educational Sustainable Development (2005-2014) giving the leadership of the project to Unesco.

³ i.e, see Davico (1994) who underlined the moral and conservative weigh of environmental positions against that one of progress; or even Offe (1993) about the role that political parties and movements for green has taken in to this affair, substituting the old infighting of the workers with that one of environment.

⁴ The detailed and complete report of the adolescent European survey with annexes and more detailed methodological note is available at www.cityrights.eu.

tomorrow and so their feelings about topics such as energy are considered valid.

After a brief explanation of the data and the method utilized, the paper has been divided into sections, as described below.

In the first section the end of a society mainly dependent on oil is assumed. The aim is to examine this topic from the adolescents perspective to ascertain if they have any opinion about that, i.e. when oil is perceived to finish and what could potentially substitute it.

The second part of the analysis will enter the nub of the issue. The aim is to develop the energy issue from abstract and isolated theoretical terms to its concrete and complex involvement in the participants' present and future daily lives.

In the third part, the analysis of issues apparently not having a connection with energy will be examined in order to identify the risks, values and investing sectors as a way to enter the way of thinking of the adolescents. It can also contribute to explaining how the ecological issue should be considered.

At the conclusion of each part, a summary interpretation is given. Finally, a general conclusion is reached.

Data and Methods

The following pages present an extract of the data collected in the mentioned research.

Research tool: The questionnaire is the tool of research elaborated and adopted by the sociological team of research from Padua University. Data derived from questionnaires completed by European adolescents aged from 14 to 18 in their schooling time. The CAWI (Computer aided web interviewing) with Lime Survey software was conducted in 2009 (from May to October).

Sample Description: The aggregate data shows the participation of 42 schools with 187 classes from a large number of EU countries, with particular attention given to the original target countries of the investigation, namely Austria, Belgium and Luxemburg, Denmark, France, Germany, Italy, Romania, Slovenia, Spain and Great Britain. All data collected has been analysed with statistical tools. In fact, all of the variables

have been subjected to quantitative analysis by the software SPSS: single variable analysis, double variable analysis (Chi-square and analysis of variance), multivariate variable analysis. Cluster analysis in particular has given some interest results, providing a useful typing in profiles in the sample.

Cluster analysis' description: "Surfing to the future", "Troubled by the present" and "I don't know" are the labels for the three risk profiles that cluster analyse has contribute to specify.

Cluster 1: "Surfing to the future". This is the most represented group, consisting of 51% of our sample. Those belonging to this cluster show high scores (corresponding to the answer Very important) in relation to the importance attributed to family, friends and health, followed by an average to high score (corresponding to the response Quite important and Neither Very Much nor Very Little) relating to study, work, environment, leisure and money. Observing the characteristics of their personal data, it is noted that this attitude predominantly concerns the females of the sample (over 60%) and males aged between 13 and 17 years. In terms of countries, youths from England (over 70%), Spain (65%), followed at some distance by France (57%), are represented in this group.

Cluster 2. "Troubled by the present" (troubled). Those belonging to this cluster have demonstrated to have a vision of the present in which, although they have a clear idea of the same values of the previous group (family, friends, health, etc.), they show slightly lower scores. But it is in the future prospect that the most significant differences emerge. Predominantly males (48%), with a minimum age of 16 years, belong to this cluster. In relation to countries, this attitude seems widespread mainly in Austria (76%), followed by Belgium and Luxembourg (58%) and Italy (57%).

Cluster 3: "I Don't Know" (IDK). It should be noted that this cluster is a residual group that represents only 7% of the sample. Those belonging to this cluster used the response "I do not know" almost exclusively, demonstrating that they are aware of their ignorance and are not ashamed of it (they could have chosen any of the possible answers at random). This group is not influenced by gender, although there are slightly more males, and is mainly made up of the youngest teenagers (13-15 years). In consideration of the low numerical relevance, territorial belonging has not resulted relevant to the discussion.

Thinking about a post-carbon society

The “post-carbon” definition takes us explicitly to the historical change, from a society founded on the logic of resources treated as infinite but that are not, into one which has to take into account the uncertainty of resources, particularly the one that has become the symbol of wellbeing in western societies: oil.

Given that, the first part focuses on the substance of the possible end of a society based on finite resources and the transition to other sources of energy using adolescents’ forecasts. Assuming that the young people have a clear interest in the topic, correlated examination of the possible alternatives as well as suggestions for others solutions than fossil fuels can be presumed.

The end of oil, from late adulthood to beyond the life span

“According to several experts, petrol will run out in a few years. In your opinion, when could this happen?” is the first question we will consider from the survey. .

With regard to the opinions expressed, all the indications offered by the sample concentrate predominantly on a medium to long term interpretation. Based on single variable analysis, approximately 4 out of 10 young people responded that the availability of oil will decline within 50 years, while 3 out of 10 said 100 to 200 years. Less than 2 out of 10 young people (equivalent to 16.5% of the sample) think that oil will run out in a short time, within the next 20 years. The remainder of the survey expressed that they had no opinion on the matter.

Given this analysis, the issue does not appear to be prominent or worthy of great investigation to the young people interviewed. Therefore the data handling allows us to observe a weak double variable correlation. However something interesting appears according to the cluster analysis⁵.

According to the profiles we obtained in the analysis, young people with a *troubled by the present* view are those who are more likely to foresee the

⁵ “Surfing to the future”, “Troubled by the present” and “I don’t know” are the labels for the three risk profiles that cluster analyse has contribute to specify. For a detailed composition, see the already mentioned report. Under the clarification that in this article the previous label of “frightened by the future” has been changed into “troubled by the present”.

end of oil within their lifetime and tend, more than the others, to consider it as a real possibility. On the other hand the *surfing to the future* profile is more likely to foresee this issue as occurring outside of their personal life span. So the former mentioned profile are more accustomed to support a possible short-term ending of oil supply. In any case, they are the minority whereas the majority tend to maintain more trust and a less critical view as regards the actual situation. Finally, the IDK profile constitute a small but valid proportion of the survey.

Alternatives to oil

“When oil has run out, what will mainly replace it?” is the second question considered.

Drawing up a classification of the alternatives provided by the questionnaire, in order of importance attributed to them by the entire sample obtained by single variable analysis, we can observe the results as shown in the following table.

Tab 1. Classification of alternative energies to substitute oil as proposed by the sample

<i>When oil has run out, what will mainly replace it?</i>	<i>%</i>
1. Renewable energy	48,9%
2 New scientific discoveries	16,1%
3 Gas	12,1%
4 Nuclear fission (nuclear plants)	10%
5 Nuclear fusion	6,9%
6 Nothing, our style of life will change	6%

The first alternative indicated is *renewable energies*. Approximately half of the entire sample affirms that this is the best alternative. No relevant observations come from the double variable analysis. Regarding multivariate analysis, these results show that the most inclined profile to this option is the IDK (57.3%); then *surfing to the future* (52.1%) and finally *troubled by the present* (44.6%). If we link these results to the idea of the end of oil supply, as indicated previously, it does emerge that the choice of renewable energies attracts varying tendencies between those who are less likely to imagine a change in the choice of energy sources in the near future, and those who previously did not express any opinion.

New scientific discoveries was the second most popular response given by the sample albeit, with a much lower percentage: (approximately 16%). No relevant observations come from the double variable analysis.

Regarding multivariate analysis the main prevalence of this option is amongst the *troubled* profile students (17.3%), then *surfing* profile (15.3%) and finally the IDK (12.2%).

The next most viable option is *gas*, with approximately 13% of the sample selecting this option. Going to double variable analysis we can observe that those countries who discount gas are France, who indicates it as an (improbable) alternative to oil with a minimal percentage of 1.5%, and England which shows a percentage of 8%, well below the average. There are no notable differences between the three profiles, except for a more marked tendency expressed by the IDK profile (14.6%).

Nuclear fission is the fourth choice, offered by almost 1 in 10 individuals, followed by *nuclear fusion*, with a slightly lower percentage (approximately 7%). No other relevant observations can be made.

To *change lifestyle* is the least popular option (approximately 6%). No relevant observations come from the double variable analysis while the multivariate analysis shows that those more in favour are the troubled profile students (6.5%), while the IDK profile remains the least disposed to imagine a different society to that of today (4.9%).

Summary interpretation: a fashionable focus on renewable energies

On the whole, according to the perspective of a post-carbon society, but pointing on oil depletion in an explicit way, it is clear that the high school students of the sample do not reflect deeply on the topic. To them, it is a problem for the medium-to-long term, and they have only vague opinions about it. Thus they have an extremely limited inclination towards a change in their overall lifestyle, which indicates that young Europeans lack attention and understanding of the issue and don't feel that it is a fundamental issue in their lives. There were exceptions to this trend, namely the responses given by the French students and also by students from countries further to the east, which showed a marked contrast to all the less critical or vague approach to the topic of the other industrialized countries.

The priority of the responses given to renewable energy displays a propensity that seems marked more by commonplace and fashionable trends than by substance, particularly the influence of the green trend, which in recent years seems to have been validated by the marketing approach of the multinationals. The possible risk is that in some cases this

promotion is merely a facade with great appeal but no substance, a point which the most critical observers (sociologists such as Hirschman 1982; Hertz 2002; Gallino 2009) have not failed to notice.

Three main aspects lead to this reasoning.

First: the value placed upon the energy resources that use gas. It's somehow surprising considering that the item "gas" is no further clarified. The interviewees might have assumed that it was a natural gas (such as methane), but they also may have considered a more widely used gas like LPG, which comes from oil in any case. Furthermore, beside natural gas, which is less of a pollutant than either coal or oil – but whose price is increasing due to its depletion – there are other types of gas (such as coal bed-methane) whose production process is environmentally destructive. Apart from this distinction, probably very subtle, the transition to a post-carbon society prefigures the end of all fossil fuels, gas included (Heiberg 2004). This is the first warning sign of a degree of superficiality or lack of information in the opinions expressed.

Second: the similarity in results regarding the two forms of nuclear energy. Even though they can be pooled together as referring to "hydrogen economy" (Heinberg 2004), they present enormous differences that the sample seems not to have taken into consideration. Thus, the mild responses given to nuclear fusion make one suspect that not all of the interviewees were able to clearly distinguish between the two energy forms. Nuclear fusion is normally indicated as the "good" alternative that scientists around the world have been attempting for many years to study and make ready to replace nuclear fission, which is the only type of hydrogen energy currently used, not only for nuclear power plants but also in the production of nuclear weapons. This fact calls to mind the dangers of the radioactive waste which fission, not fusion, produces and the glaring historical examples which have always and are even now stimulating international debate. At the time of the survey, the debate was not so prominent, but now, some months later, European countries, such as Germany, France and Italy, are taking the question seriously into account, as they have quickly turned their energy policy against nuclear fission. Moreover, that fact that nuclear fusion in theory produces enormous quantities of thermal energy as is produced in the centre of the sun, might perhaps have led to greater value being placed upon it in terms of

hypothetical proposal for research investment, despite the fact that it is at present still in the experimental phase and very expensive.

Finally, the tendency to imagine a different lifestyle is decidedly absent, points to the modernist approach towards the availability of resources and their use. This lack of consideration is especially evident in countries where capitalism is more entrenched, while it appears less in Eastern Europe which places more value on the eco-sustainable impact of human existence.

The oil impact and the pollution aspect

As far as this second part is concerned, key attention is given to the ability of adolescents to envisage a concrete relationship between energy sources and various parts of their daily life. This is one way to understand if any priority of the question as a topic has been developed.

Another way is assess knowledge of pollution acquired by European adolescents in concrete terms.

When oil is mainly gasoline

“When petrol runs out, our style of life will also probably change. In your opinion, will the following aspects of life get worse, better, or stay the same as today?”

This question allows us to observe in more detail the perception young people have about the presence of oil in several aspects of their daily life. The style of life – a fundamental concept increasingly used to describe the behaviours of people who are less and less connected with specific socio-economic classes (Bourdieu, 1983; Sobel, 1981; Giddens, 1991; Secondulfo, 2002; Fabris, 2003) – has been rendered by a series of items extended to areas such as quality of work, home, transport, food, entertainment, relationships with family and friends.

Turning to the main results, there emerges a very strong connotation given to oil considered as “gasoline”. That is evidently predictable due to the importance attributed to “means of transportation” as the principle item concerned with oil impact. In addition nearly half of the sample mainly foresee the absence of oil negatively on that item (46% say “worse”), while some others (20%) answer “the same”, which is the lowest rate obtained compared to other items.

Given this information, an interesting annotation can be made by looking at the double variable analysis when considering the tendency by country. From one side the perceptions regarding oil absence for transport positively is highest in countries like France (37.4%), Italy (32.4%), Slovenia (31.3%) and Spain (28.6%), whereas the other nations show a downward trend and have worsening perceptions.

In regard to other aspects such as *quality of food* (46%) and *quality of place of residence or work* (44%) they have a similar position in the middle of the scale, and thus appear relatively stable compared to today.

Finally there are the relational aspects which seemingly have nothing to do with oil. First, the quality of *friendships* and *family relationships* for which about 65% of the interviewees maintains that the lack of oil will see these unchanged from today; then the quality of leisure which will stay the same according to 55.9% of the sample.

Briefly a rather simplistic idea of oil's presence in modern life can be assumed. The fact that transport is the prominent area where this can be perceived is probably emblematic of this. In addition the high rate of "I don't know" answers provided confirms that these adolescents don't have any opinion about specific issues, except for some countries (e.g. Germany, France, or even Romania), which represent a minority of the sample.

Conceivable scenarios between idealism and controversial proposals

"In 2030, in your opinion, will the following phenomena decrease, stay the same or increase?"

This question seeks to discover in depth the ecological sensibility acquired by European adolescents in a more concrete manner.

In order to do this, a conceivable scenario of tomorrow is imagined using a number of drivers, some directly and some indirectly connected with pollution.

These stimuli are:

- a) *environmental sustainability* with explicit references or easily recognized keywords and connected to pollution (i.e. use of *renewable* sources or small apartments to *save* gas).
- b) *means of transport*, on the one hand without direct reference to environmental sustainability (i.e. use of cars in general, cycling, usage of small cars, dissemination of collective transport means) and on the

other hand the use of transport in which the reference is more explicit (i.e. the use of cars without petrol);

c) *working from home* and *type of residence*, according to a scenario that requires mobility on the one hand and energy saving on the other.

To sum up, the most emergent stimuli chosen by the sample are those less inclined to pollution in an explicit manner.

Given that, it is noticeable that the first proposal is for *solar or wind energy* (i.e. renewable energy), for which over 80% of the sample predicts its increase in the future. Next is *cars without gas*, predicted by approximately 73% of the sample.

Surprisingly, the sample expresses a similar expectation for a greater use of *bicycles* in the future (48%), and for an increase in *small cars* (46.3%). The two choices may seem to converge in terms of attention to the environment, but in reality they only loosely do so. Cycling is certainly a non-polluting and satisfactory idea of a clean lifestyle, unlike the size of the car, which pollutes less if it is small, it is so only under equal conditions (petrol, or LPG, i.e). Although the idea of small cars is maybe more likely related to finding a parking easily, this nevertheless supports the idea of a greater number of cars per population, while leaving the prospect of consumption in developed countries with advanced economies unchanged.

Then small apartments are forecast to increase by just over 44% as is tele-work, both of these items having a high percentage of "do not know" answers. In addition, the likelihood of changing apartments is as yet a trend that will remain the same according to 35% of the sample and continue to increase for 40%. Even these last two items do not appear disjointed: If you work from home, it is not important where you live, but less travel means less pollution. In fact, that attention is not kept from the sample.

Furthermore, the increase of cars in general as indicated by 41% of the sample, is equally represented in the forecast of collective means of transportation increasing.

Although there is a general tendency towards this interpretation, another consideration has to be highlighted with regard to the multivariate analysis. In fact, it is noticeable that the majority of the sample that are *surfing to the future* believe in a society developing along a precisely capitalist line, even while considering a possible scenario of coexistence and crossover between the phenomena considered. For this reason those people appear to be those

best placed to consider the present positively, and are well disposed to prefiguring a not too dissimilar future.

In contrast, there are other students, the minority, which appear in some way *troubled by the present* and tend to imagine a more radical change to a less certain future. This disposition could explain the foreshadow of a further development of alternatives to the status quo.

This trend is interesting because it is widespread in the whole sample.

Summary interpretation: the pervading of the modernist approach

In general, a limited awareness of the presence of oil in modern life has been shown. As a consequence, the opinion of the youth appears to be quite simple and rather driven to identify energy saving and care for the environment in terms of oil, which is solely identified with gasoline.

It is worth stating at this point that the young people interviewed were born and have grown up in a situation where oil is everywhere: plastics, packaging, food production (Walsh, 2009; Baderstscher *et al.*, 1997), computers (Nissim, 1997), mobile connection (Ling, 2004) and the list goes on, from final energy to grey energy, as it is employed in throughout the production and distribution process, something they are largely unaware of.

As far as the impact of oil on the environment is concerned, many authors have highlighted the difficulty of reasoning in a vacuum (i.e. Latouche, 2005; Hirshman, 1983; Petrini, 2009; Walsh, 2009; Heinberg, 2004, 2007, 2009), even if it is a fairly normal trend among the public. The eco-sustainable impact is not therefore aimed merely at the presence and use of oil as a fuel, but calls for broader and more careful consideration.

It is worth noting that this commentary is an argument in support of a surface acquaintance to environment topic that comes from the adolescent sample. If that is quite true, then the more ambiguous and controversial points highlighted are:

- increase using of bikes/increase in small car;
- increase in cars/increase in collective means of transportation;
- vague notions about tele-work and moving house according to a trajectory connected to environmental sustainability.

To sum up, what emerges is the development of largely sensational ideas, that could have been quite influenced by fashion trends or a romantic approach more than substance. That is to say commonalities and stereotypes to which little or no further consideration was given. As a

consequence, besides a declared intention to protect the environment, when explicitly recalled by key word, it supposes a careless attitude which otherwise assumes the lifestyle of excess typical of an industrial society. This a general attitude that has been well established since the end of the Second World War and that accelerated in the late 1970s and that seems to be taken for granted by youngest European generation, as far as the survey allows to see.

As many authors from disparate discipline have underlined in particular from the 1970's⁶ until the present, speaking about a post-carbon society in not only speaking about energy supply, and the framework underlines how the end of oil is only one element among many relating to human and social existence. Therefore, it is possible to correlate the shortage of fossil fuels; the continuing population increase; the decrease in per capita food production; global climate change or other signs of environmental decline; the non-sustainability of the international debt and the potential collapse of the value; international political instability. That is why the oil depletion case doesn't consist only of the possible development of alternative sources; it requires a change of lifestyle and attitude.

One possible way to do this is by saving and decreasing, which is a strategy to reduce this impact, based on the assumption that western countries are excessive consumers of energy (Latouche, 2005; Hettne, 1990; Hirschman, 1983). We can therefore focus on the fact that the widespread use of oil and energy-saving policies are only mildly present in the information and reflections of the sample group of young interviewees.

Trusting the future: risks, values and sectors from adolescent point of view

This third part deals with the attitude of adolescents related to the identification of risks, the set up of values, and the sectors they believe relevant to the future. Even if it could seem unconnected to energy topic, it is a way to comprehend key elements the youth refer to to give a meaning to the society they are a part of. If what they expect, fear or believe, is related to their mentality, it could be helpful to understand their priorities of

⁶ A special recall to Shumaker (1973) text, one of the very first author who entrance the question of energy depletion in its complexity and consequences on the social establishment.

interests. These indications will contribute, in a sociological way, to explaining how the ecological issue is worth considering by them.

Risks and proximity

What risks do young people from the high school sample perceive?

We asked the sample group if such risks as nuclear war, terrorist attacks, criminality, corruption, drug and alcohol consumption will increase, decrease or remain stable.

All these risks set to increase with respect to the future, according to 6 out of 10. We can therefore recognize an interpretation of the present characterised by aspects of uncertainty which tend however to stay equal or even increase in the future.

Coming to the order of priority they gave to increasing risks, alcohol consumption ranks first, followed by terrorism and then drug consumption which therefore represent the three risks perceived as having the biggest probability of damaging the future from now to 2030.

On the other hand, among the least indicated risks in the present and in the future, the young interviewees say that nuclear war is the least likely to happen. Beside that, *criminality* and *corruption* appear as the main elements of continuity with the present and simultaneously tending to increase in the future. This is sign that the youth are quite convinced that they are living in a world where criminality and corruption are present and not easy to change. The results of single variable analysis of two of the main items are shown in the charts below.

Figure 1. Risk of Nuclear War by Countries

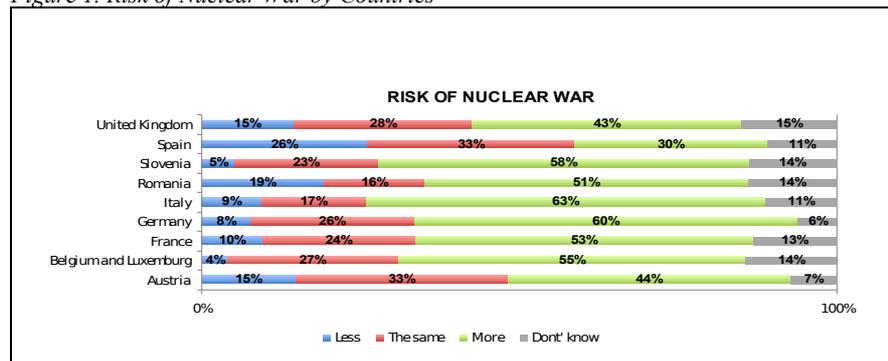
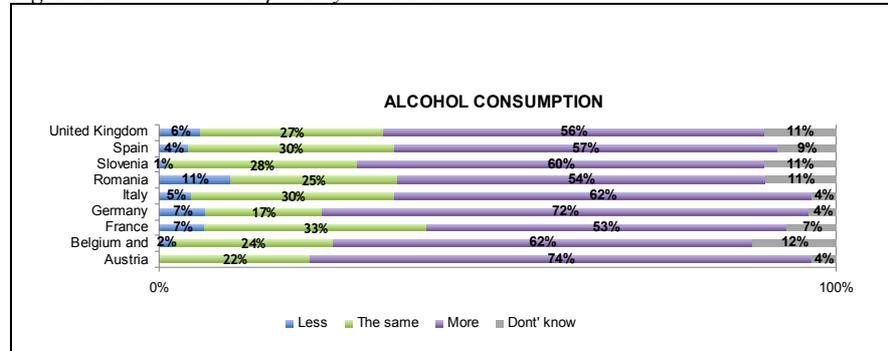


Figure 2. Alcohol Consumption by Countries



Other interesting information emerges from the multivariate analysis. In fact, the profiles defined as *surfing to the future* and *troubled by the present*, diverge, with a vision of greater solidity for the latter in imagining troublesome scenarios in the future rather than in the present. If we delve into the details of the risk profiles measured in the sample and compare them to the future scenario, we can see the emergence of quite a constant difference of almost 20 percent points portraying the different risk aspects foreseen in the future, and foretelling a varied scenario between today and tomorrow. The present risk scenario is not so close for the *troubled* than what appears to the *surfing* group, who instead are more inclined to less radical and pessimistic interpretations for tomorrow.

As a consequence a possible question that comes to mind is why give such importance to drugs and alcohol? Sociological research in this field⁷, have shown some connection with psychoactive drugs consumption. That

⁷ In Europe, there have been two large-scale surveys carried out in an attempt to collect comparable data on alcohol use among young people: on the one hand, *The European School Survey Project on Alcohol and other Drugs* (ESPAD), and on the other hand, *The Health Behaviour in School Children study* (HBSC). The ESPAD project was conducted for the first time in 1995 and provides a reliable overview of trends in licit and illicit drug use among European students (aged 15–16 years) The HBSC study was initiated by researchers at the beginning of the 1980s and was subsequently adopted by WHO. It focuses mainly on young people's health, well-being, health behaviour and social context in Europe. Since then, several surveys have been conducted involving adolescent and young people and with a rising number of participating countries (Currie *et al.*, 2008). Other important statistical source on the topic are monitored Eurobarometer, this latter giving a comprehensive picture of people's use of tobacco, alcohol, cannabis and other substances in Europe, with even focus on the youngster (Hibell *et al.*, 2009).

could be a reason why the students' answering the Pact survey give such a relevance to those kind of risks rather than the others mentioned. That is to say not because of a direct use but probably because it is possible to suppose that young people would have seen or talked about drugs and alcohol in their daily lives⁸. This approach accords with some recent theories about the spread of psychoactive substances in young people context⁹, indeed a fact that can contribute to students forecasts: because of their proximity.

Assuming this proximity, a reinforcement of the suggestion of how the issue of the consumption of substances is strongly felt by the youth emerges from the IDK profile. That is to say that the group of adolescents who don't take sides that for all the other question about energy express themselves with regards to drugs and alcohol. An amazing 42.7% among these people believe that consumption will increase.

Finally, mass media representations of issues would have taken into account, an aspect that much additional work will be required before a complete understanding or deeper understanding of that phenomenon occurred (Cottle & Beck, 1998)

Where values take place

Turning now to values, the following section deals with two aspects.

First one is about the scale of values the young students from the survey give importance from now to their adulthood; second one through the

⁸ According to a recent study conduct by Pittsburgh University, Dartmouth Medical School and the Center for Health Equity Research and Promotion of the Veterans Administration di Pittsburgh (Primack *et al* 2008: 169–175), psychoactive substances portray find a normalization echo in the popular music, and in particular in that one most listen by the young person. The researcher analyse the text of the songs present in the Billboard charts and they find that the 41.6% of them show references to the use of drug, while more precise recall to a specific substance appear in 33%.of them.

⁹ Qualitative research underline that it is approximately around high schooling time, and about the 15 year old, the period in which adolescents tend to change their mind, from negative attitudes to drugs into a less connoted or even positive one, alcohol in particular (Crawford, Novak 2006). That is about rite of passages, from childhood to a adulthood. Frame context the youth share and experience, in particular with friends, give the site to their coming lifestyle attitude and opinions. Assuming that, the youngest of the sample (14) are those one who tend to express more concern about the use of drugs as a growing risk for tomorrow than the older one (17-18 people). Because of the complexity of the theme, see i.e. Cipolla (2007); Maffesoli (2008); Guarino (2010); Measham (2007).

definition of sector to focus in order to improve the nation in which they live. These two questions are taken respectively into account.

Starting with the first aspect, with the single variable analysis it is noticeable that about 7 out of 10 interviewees placed money at the top of all the values, with almost 10 per cent higher than the next most important, "competition" (61.1%).

The next two are *importance of work*, then *fear* and *egoism*, according to more than half of the sample.

It is worth noting instead that all the values dealing with a community orientation such as *cooperation*, *altruism*, *solidarity* on the whole seem less important for the future, showing generally a weak trend even in the present.

What it is noticeable anyway in terms of continuity between today and tomorrow, is the importance attributed to *knowledge* which perhaps represents the most stable and permanent value to invest in, and which however the boys and girls hope our society will tend towards and continue to be trusting, especially the German high school sample.

Regarding double variable analysis, and still considering the emerging and the common factors as regards this picture, it is noticeable a scarce influence with respect to the geographic context of origin or other variable, connected to the double variable analysis.

Regarding to the profiles, from one hand, *surfing to the future* profile tend to place individualistic values on the present top scale value. So as a consequence, they tend not to forecast a real gap from nowadays to their adulthood life time. On the other side, such an interpretation seems to be shifting in the future by those *troubled by the present*. Generally, the opinion of this profile seems more community oriented in the present but then it tends to become more oriented towards oneself though especially regarding future perspectives.

The second question worthy of attention asks to evaluate which sector the high school interviewees think should be important to invest in order to improve the nation in which they live. The alternatives went for state and market, as traditional subjects from which the modern nations have taken form, to civil society.

Single variable analysis shows that:

1) strengthening the role of the market (companies, economic force, etc.) is an indication provided by 28.4% of interviewees;

- 2) 27.7% don't know how to respond;
- 3) strengthen the role of the state, responded 23%;
- 4) strengthen the role of the free forms of association, responded another 20.9%.

As it is noticeable, the market appears as the driving force. Assuming that, we have considered the factorial distribution and evaluated how having chosen one of the three options (market, free association and state) is linked to different ideas concerning the actors of trusting for the future.

As a result, those who point to the market as a driving force, concentrate more on the role of science and medicine.

Those instead who point more emphasis on free association, give more importance on the work of volunteers, NGOs and teachers and therefore on civil society as a resource to improve the future.

Finally, those who point to the state, assume an intermediate position and therefore give more importance on the UNO, students and NGOs but also on teachers and judges, offering a vital contributions to the organised community.

Other interesting observations appear in respect to the two profiles, *surfing to the future* and *troubled by the present*.

In summary, the two profiles appear connoted by a opposite inclination towards the importance of civil society that is considered more important to those belonging to the *troubled by the present* than to the *surfing* profile people. That means that means that *troubled* are more community orientated, valorising voice phenomenon (Hirschman, 1982). That is a typical position of consumerism where free association, and in particular consumer associations, can find a way to express themselves and counteract the power of the market. The other profile, perhaps due to the slightly younger age, move towards symbols for schooling, expressed in terms of teachers and students as well as a more traditional idea of the market where entrepreneurs are given more importance and confirming in terms of trust the idea that they are less able to think in non-traditional terms.

Summing interpretation: risk and trust dimensions as a question of cultural proximity

The aim of the third part was dedicated to identifying main risks and values perceived by our sample of European adolescents in order to have a

better idea of their life situation perception and the reasons for their survey answers. As seen from the data comment, the more interesting assumption recalls the concept of proximity: the more a topic has been perceived as next to a person, the more they seem to take it into account. As observed, risks perceived by young people appeared more connected to what directly affect their lives.

Then, the high school students of the sample have a basic trust in capitalist and individualistic values while the sector of principal investment for tomorrow is the market. In addition, science and knowledge emerge above all the contradictions within the sample and promote an idea of progress as growth which looks to be persistent. These observations can be connected to the sort of romantic idealism that our sample show toward energy topic, with a degree of involvement in the debate that looks extremely soft and superficial.

The concept of risk plays a central role in contemporary society, starting from the theory that decisional society's dependency on the future has increased inasmuch as techniques and the related awareness of one's own possibilities have taken up nature's domain. In Luhmann (1996: 6-7). words: "The fear that things may go wrong therefore grows rapidly and brings with it the risk attributed to decision making". If being native in a risk society could influence the new generation approach to the energy topic, then some further considerations need to be proposed.

Indeed, it is increasingly more and more clear that the relentless pace of technological progress and innovations promoted by modernity have characterised contemporary social processes to such an unexpected extent of overt *uncertainty*¹⁰, allowing the future paradoxically more difficult.

In this situation, confidence in human capacity is the main resource in facing that situation. Confidence may be defined as a positive cognitive and emotional expectation formulated in conditions of uncertainty. That means that confidence helps to reduce the future's complexity because "those who show confidence anticipate the future and act as if they were sure of the future" (Luhmann, 2002). For that reason, confidence may be regarded as a substitute for uncertainty because it allows to undertake actions whose results are uncertain. It is therefore an operational relief since constant doubt brings about paralysis.

¹⁰ Cfr. Z. Bauman (1999) where quoting the term *insecurisation* used by Jean-Luc Mathieu (1995) speaks of "increased uncertainty" (*uncertainization*).

As a consequence, different meanings of confidence need to be underline. One is about “faith”, that allows us to deal with the future (unknown), as if it were the present (known). The other one is “trust”, that is the path of sense entrusted to the interpretation of events (Luhmann, 2002). Then, “hope” that seems to be a sort of expectation, though weaker and hazy. It is usually correlated with more passive attitudes. There is the hope that nothing will happen but this does not depend on us, as a consequence we do not act to find a solution. So this last one seems to be the other side of trust when it becomes a bond..

From this article analysis it could be possible to suppose that adolescents’ approach reveals a blind hope, more than faith or trusting. In fact the majority of this high school sample doesn’t have an in-depth awareness of the energetic topic, from one side, and from the other, they supply this hole, with what the established solutions the system proposed.

The sample preference for science and knowledge beside capitalistic values and market approach could reveals that approach. That is definitely taken for granted, looking like neutral even if it is (Wynne, 1987)

Conclusions

The loss of confidence in a linear and incremental progress is slowly, but inexorably, questioned: advanced societies, which are intensive consumers of natural resources, should consider the idealistic economic and social exuberance of the late 60s, and reflect in a new way about the inherent limits that the "environmental" crisis places as a global problem under the spotlight of the world.

Since 1978, thanks to the contribution of the sociologists Catton and Dunlap, a specific consideration regarding the controversial relationship between the natural and social environment¹¹ came into being (Dickens, 2004). Multiple environmental and social disasters have been harbingers of unprecedented attention from society and scholars themselves¹², who

¹¹ With this so-called *New Ecological Paradigm (NEP)* arises as a sociological/critical approach, incorporating the natural environment in the object sphere of sociology.

¹² Another important author is Turner (1978), the first to become interested in the so-called sociology of human disasters and to study in depth the extent of socio-technical responsibilities of "self-made man" environmental disasters.

consider the concept of risk and uncertainty as the only possible guideline for the future.

From the conflicting climate of the Cold War, to the growing problem of atmospheric pollution, unexpected disasters have to be added to the mix: the explosion of a chemical plant (Great Britain, 1974), dioxin leakages (Severo, Italy, 1976), radioactive material leakages (Three miles Island, USA, 1979), nuclear explosions Chernobyl, Ukraine, 1986), and the explosion of a space shuttle (Challenger), are some of the most striking episodes of a long list that continues until today, Fukushima being the last and latest one.

It's probably not only because of the above events that one of an increasing number of sociologists¹³ are using terms as uncertainty and risk to connote the distinctive traits of *late* or *post-modern* society. In this article the "post carbon" society referring, take us explicitly into that question looked through the energy problem.

An important aspect of the article concerns the presence/absence of the idea of a future society without fossil fuels in the adolescents perceptions. Insofar as the idea seems very far away and barely discussed, a simple and basic understanding has been presumed in terms of the young people surveyed. Starting from the general conception of the population who lives in a capitalist society being rather distracted from environmental themes, this article has shown a portrait where adolescents are inclined to treat ecological issues in a superficial manner and always with the certainty of the wellbeing achieved under the present established system. This

¹³ The reference is to all those social scientists who more or less directly have dedicated their works to the theme of risk and all of its connections to the world of science, politics, economics, communication and society. Among the works that have more specifically stimulated reflections it is possible to mention: U. Beck (1992), *Risk Society: Towards a New Modernity*, Sage, Londra; Id. (1995), *Ecological Politics in an Age of Risk*, Polity Press, Cambridge; Id. (1998), *Politics of Risk Society*, in J. Franklin (ed.), *The Politics of Risk Society*, Polity Press, Cambridge: 9-22; J. Franklin (ed.) (1998), *The Politics of Risk Society*, Cambridge, Polity Press; A. Giddens (1998), *Risk Society: the Context of British Politics*, in J. Franklin, *op. cit.*: 23-34; Z. Bauman (1999), *La società dell'incertezza*, il Mulino, Bologna; N. Luhmann (1996), *La sociologia del rischio*, il Mulino, Bologna; S. Cottle e U. Beck (1998), *Risk Society and the Media: a Catastrophic View?*, "European Journal of Communication", n. 13 (1): 5-32; R. Sennett (1993), *The Coscience of the Eye: the Design and Social Life of Cities*, Faber & Faber, Londra; M. Douglas (1986), *Come percepiamo il pericolo*, Feltrinelli, Milano;

modernist approach is taken for granted as part of the “natural” development in which people play a part.

Therefore it may be observed how the sample demonstrates an overall interpretation of the future in which the emergent values are money, competition, work, but also fear and physical appearance. We can note how much these elements decisively recall the characteristic features of capitalism (especially money, competition, work) and of post-capitalism, (post-materialistic values such as knowledge, but also the emergence of appearance, and also fear).

For these latter reasons, this article underlines a diffuse taken for granted approach to actual life style, and a bare perception of energy supply in itself and through social implications. Nevertheless considering the great idealism or fascination about ecological issue that sample shows when it is clarified and explicit, it is possible to suppose an interest that anyway has to be better supported. With the objective to make these new generation more aware about problems that in fact they can't really touch or see directly.

Assuming that, a proposal from the article is the potential spread of information (Sajeva & La Belle, 2009) in order to reduce the uncertainty on which adolescents are already accustomed (Fabris, 2008; Furlong & Cartmel, 2006). It is not a merely question of more information, but of its credibility. As a consequence it could be useful constructing tools with adolescents contribution (Brodie, 2002; Brannen, 2002; Devadson, 2008) and with the mainly extent to start from their point of view and to individualize full of sense pathways.

A question we can't answer is what would have happened in the perception of the matter if the research had taken place after the Fukushima disaster. Would different answers have been offered by the respondents? According to Marc Augè (2010), the impact of this catastrophe would probably have struck their sensibility because, in his words, when an event goes beyond society's ability to diagnose it, and its effects and resonance are particularly strong, an inversion of symbolic reality is required. That is what has happened in the changing attitudes toward nuclear fission supply in Germany and Italy very recently as a social reaction to the Japanese ecological disaster. Arguments in favour of fission, based on scientific rationality, have been countered by other kinds of rationality, such as those connected with environment and civil society, which Beck (2000) forecasts

to be increasingly plausible in the post-modern period, a period that linear explanation and solutions won't support anymore.

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