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Increasing communication, promoting awareness, realizing engagement

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***Perspective**: Theoretical, research and educational visions*

***Fields**: Human, social and natural sciences*

***Issues**: Human impact and responsibility, Educational processes*

Whether we believe they are warranted or not, prestigious awards, at least potentially, reach a wider public, even if only for a limited period of time. One year ago, we pointed to the importance of awarding the 2017 Nobel Peace Prize to the *International Campaign to Abolish Nuclear Weapons*. While the work of this international movement continues, it is clearly difficult to gauge the extent to which greater media exposure has contributed to the achievement of its goals. By the same token, the 2018 Prize, jointly awarded to Denis Mukwege and Nadia Murad "for their efforts to end the use of sexual violence as a weapon of war and armed conflict", is of equal significance. Both for the gravity of the issue in question and because it highlights some critical aspects of the complex and problematic relationship between phenomena and events brought to public attention through media communication, the information conveyed, the impact created and the eventual outcome of this process.

According to the Nobel Committee, both Mukwege and Murad have helped to give greater visibility to wartime sexual violence, thereby making a fundamental contribution to focusing attention on and combating such war crimes. Mukwege is a physician who has spent much of his adult life helping the victims of sexual violence in the Democratic Republic of Congo. His work has had an impact on the lives of tens of thousands of survivors and has inspired people around the world. Murad is a member of the Yazidi minority in northern Iraq and was herself a victim of rape and sexual slavery perpetrated by the Islamic State. She has been widely praised for her courage in speaking out about her personal ordeal as part of a collective drama and campaigning to help other women refuse to remain silent and suffer from shame for the abuses to which they have been subjected.

At the same time, rape is by no means something new in the long list of war crimes perpetrated by humanity. It is paradoxically both well-known and still subject to censorship, that rape also took place on a massive scale in Europe during combat operations in World War II, and that when allied troops entered and occupied German territory the number of women who endured sexual violence is estimated at being up to two million. Only relatively recently, the story of hundreds of thousands of women and girls forced into sexual slavery as "comfort women" by the Japanese army in occupied territories before and during World War II has emerged and been widely publicized, even though such information had long been available, but willfully ignored.

Issues such as campaigning for the abolition of nuclear weapons or ending the use of sexual violence as a weapon both pose crucial questions about whether and in what way occupying the international stage can make a significant difference. More generally, it is an open question as to what extent increasing media communication can lead to more information and facilitate understanding that is then translated into changing attitudes and enabling capillary action, bridging the gap between promoting awareness and realizing focused and effective engagement.

As a further example, climate change and global warming currently constitute perhaps the most widely-discussed environmental issue, although this is only one among many critical questions that involve worsening scenarios. Other issues are also in great need of adequate channels of communication capable of raising widescale awareness of the increasing risks involved. For example, the 1992 Rio Earth summit gave rise both to the UN *Framework Convention on Climate Change* and the UN *Convention on Biological Diversity*, considering each of them to be of equal importance in terms of the threats to sustainability. Subsequently, however, for every twenty examples of media handling of negotiations related to climate change there has been only one concerning talks on the loss of biodiversity. The recent meeting in Sharm el-Sheik with the aim of working on a framework for new targets, hopefully to be finalized by state leaders in Beijing in 2020, has attracted much less media attention. Moreover, it has been conspicuous for the absence of a number of important countries such as the United States

and also expressed current fears for policies in such countries as Brazil, where nationalist governments are denying the very existence of an emergency and moving away from the principles of international cooperation.

While it is by no means the first document to contain such clear warnings, the latest *International Panel on Climate Change* special report furnishes, in its summary for policymakers[1], its most unequivocal and incisive description of the efforts necessary to reach well-defined goals and respect certain timescales. These will, however, require massive efforts in order to be achieved within the necessary deadlines, and this month's climate talks in Poland have done little to move in that direction. A recent study shows how most countries' climate commitments currently still fall far short of the 1.5-to-2.0°C goal set in the Paris agreement of 2016[2]. Furthermore, a study published by *Nature* shows that global carbon emissions in 2018 will have risen by over 2%, despite the urgent need to decrease them drastically[3].

A few days after the publication of the IPCC report, the Swedish Academy announced that the "Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel" – informally presented as the Nobel prize for Economics – was to be awarded to William Nordhaus and Paul Romer for their studies on carbon tax (Nordhaus), and integration between technological innovation and long-term macroeconomic analysis (Romer). In a subsequent interview, Nordhaus argued that achieving "sustainable development" required awareness of the dramatic nature of the situation, the introduction of a carbon tax and appropriate technological innovation. Awareness is necessary in order to achieve recognition of why a carbon tax is essential even by those who do not want it and promote technological changes that will facilitate the transition to a low-carbon world without subverting the overall macroeconomic organization.

Nordhaus believes that people's awareness is in fact now often considerably in advance of the ability of governments to implement the necessary changes. At the same time, while increasing numbers of polls and surveys confirm this rise in awareness at least about climate change and global warming (if not about other major planetary environmental issues), according to the European Social Survey (*European Attitudes to Climate Change and Energy: Topline Results from Round 8 of the European Social Survey*, ESS Topline Results Series 9, September 2018[4]) most people seem to have not yet developed the level of awareness needed in order to achieve the second target indicated by Nordhaus. Carbon tax, either because little known or understood, or perhaps simply because it is a tax (with all the negative connotations this term brings), attracts very limited consensus with respect to other measures, such as subsidies for renewable sources and energy efficiency, in particular under the form of incentives for behavioral changes and banning of less efficient means. Nevertheless, an interesting experiment introduced back in 2008 in British Columbia, whereby a carbon tax introduced by the provincial government putting a price on fossil fuel emissions was accompanied by returning to people through tax cuts all the extra revenue raised, may provide an effective example of how to address the problem.

The papers included in *Visions 10* look at some examples of how such informal agencies as media communication in general and more formal agencies such as universities and schools can address questions related both to learning about and taking action to address current issues. Media communication is an essential component of increasing awareness of problems

[1] http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf
[2] https://www.nature.com/articles/s41467-018-07223-9
[3] https://www.nature.com/articles/d41586-018-07585-6
[4] https://www.europeansocialsurvey.org/docs/findings/ESS8_toplines_issue_9_climatechange.pdf

and promoting understanding of specific issues on the part of the general public. The uniqueness and urgency of our current situation has recently been expressed even by Kristalina Georgieva, the CEO of the World Bank: "We are clearly the last generation that can change the course of climate change, but we are also the first generation with its consequences". At the same time, equally important roles must be allocated both to stimulating public debate and, in particular, enhancing young people's engagement. If more than 40 percent of the current global population is between the ages of 10 and 24, then clearly young people must be empowered to be a driving force for their own and older generations. Sustainability cannot be achieved without their direct involvement and they are the ones who risk facing increasingly devastating consequences of climate change. A crucial question is thus that of how to facilitate the process whereby young people move from being the object of education to becoming the subject of their own action.

In "The Anthropocene Media Project. Mass Media on Human Impacts on the Earth System", Leslie Sklair describes an ongoing research project on how the Anthropocene (the geological concept created to measure and name human impacts on the Earth System) is represented in the mass media in local languages all over the world. Data has been collected from online searches of newspapers, magazines and other news media websites from around 100 countries/regions by about 50 volunteer researchers and is being analyzed by years of publication, numbers and types of articles. The analysis shows how issues can be ignored or misrepresented by the media. This is in part because both the scientific and media establishments, together with the business and political interests which underpin them, prefer to reassure the public rather than present the alarming detail of the risks that are clearly being run. There is a need for media communicators and science educators to promote greater awareness of the many aspects of the unsustainability of current human choices and trajectories.

In "What is at stake for scientists when communicating ecology? Insight from the informal communication initiative "Cammini LTER", Alba L'Astorina, Caterina Bergami, Domenico D'Alelio, Emanuela Dattolo and Alessandra Pugnetti, present reflections on an initiative regarding informal communication of ecological research called "Cammini LTER". The research is based on itineraries connecting a number of sites which are a part of the Italian Long-Term Ecosystem Research network. LTER-Italy ecologists walked and cycled together with citizens in order to create a "physical and visible movement" of researchers towards and with citizens, so as to give the public the chance to become familiar with various Italian ecosystems. The focus is on debates and reflections between the researchers themselves and in particular on issues concerning science communication and its relationship to research production, arguing for the need for a cultural shift in this respect. Co-construction and exchange of knowledge are seen as crucial for communicating ecology and creating a shared civic culture, based on mutual responsibility and collective contribution to addressing socio-ecological challenges.

In "Should justice for people come before justice for the environment? Engaging students in debates about environmental justice", Helen Kopnina examines the differences between ecocentric and anthropocentric positions with regard to justice as they emerge from university students' perceptions of the concepts of social and ecological justice. The paper looks at how the students debate the relative values assigned to humans and the environment. Putting justice for people before the environment can be based on evidence that biological conservation can harm local communities, on the idea that the notion of justice itself is framed by humans and therefore remains a human issue, and also on the assumption that humans have a higher value than other species. Putting justice for the environment first is based on the premise that only an ecocentric ethic guarantees protection of *all* species, including human beings, and thus ecological justice already guarantees social justice. The research demonstrates how for

many students there is a convergence of social and ecological justice when human and environmental interests correspond. Ultimately, the common "enemy" of both vulnerable communities and nonhuman nature is seen to be an ideology of economic growth and industrial development.

In "The Contribution of the Capability Approach to the Understanding of Young People's Sustainability Engagement as a Positive Developmental Outcome", Giulia Rossi and Martin Dodman argue the need to recognize how young people's engagement with sustainability includes both civic and pro environmental behaviors, such as environmental activism, that contribute to the development of sustainable communities. This is based on a holistic idea of sustainability, where civic democracy and ecological integrity are strictly interconnected. The lack of empirical studies exploring this kind of engagement among young people can be seen as a consequence of the lack of shared theoretical model that provides a framework for both types of behaviors. The authors show how integrating Positive Youth Development with the Capability Approach can provide a new theoretical model based on the idea that both positive individual and sustainable development are a question of social justice that takes place within specific domains and is related to understanding experience within individual life courses.

In "If Dante had known Phytoplankton. A comparison between literature and science through the didactics of metaphors", Maria Rosaria Vadrucci, Floriana Vitale, Maria Teresa Duggento, Caterina Alberani, Aurora Calò, Giorgia Giancane, Beatrice Barbara Rizzelli, Syria Schipa and Roberto Visconti describe a project involving High School students and the Environmental Protection Agency of Puglia in Italy. In order to promote students' understanding and awareness of an ecological issue, the authors propose an interdisciplinary approach which combines the study of Dante's Divine Comedy and HABs, colonies of algae, simple photosynthetic organisms that live in the sea and freshwater and grow out of control while producing toxic or harmful effects on people, fish, shellfish, marine mammals, and birds. Since HABs can be defined as "bad", based on their negative characteristics, some of these were compared to the sinful souls that Dante and Virgil encountered along their metaphorical journey into Hell. Bridging the gap between humanistic and scientific cultures by integrating literature and science in terms of ecological indicators helps students understand the relationship between the sustainability of human and environmental trajectories.

Much of both media communication and educational enterprise tends to associate sustainability almost exclusively with the environment. While the link between the two is of crucial importance, the ability to recognize sustainability as central to existence is also of vital significance. Our endeavor to promote this recognition depends on an understanding that for all people sustainability is about the relationship between everyone's present and future. At the same time, young people's interest in cultivating that relationship must necessarily be greater, simply because the future will determine much more of the nature and quality of their lives than with older age groups. This is why young people must urgently both become more informed and aware and demand a greater say in the decisions taken today that will have such a bearing on their future in particular. An alliance between the young and the old requires collaborative (working together to help each other fulfill their needs) and cooperative (working together to plan and realize new and common human trajectories) engagement. As many of the papers in this issue show, promoting behavioral change involves motivating personal engagement by linking it to what is feasible and can be done on a local scale while relating its significance to a global perspective; rendering communication understandable through specific and personally pertinent examples, graphic representations and metaphors that can enhance its impact; fostering critical appraisal of the contents of what is communicated through reflection and debate; creating a sense of community whereby understanding co-emerges,

objectives are co-defined and action is co-implemented.