



To be or not to be: How do we speak about uncertainty in public?

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One of the challenges related to hazard communication concerns the public perception and understanding of scientific uncertainties, and of its implications in terms of hazard assessment and mitigation. Often science is perceived as an effective dispenser of resolving answers to the main issues posed by the complexities of life and nature. In this perspective, uncertainty is seen as a pernicious lack of knowledge that hinders our ability to face complex problems. From a scientific perspective, however, the definition of uncertainty is the only valuable tool we have to handle errors affecting our data and propagating through the increasingly complex models we develop to describe reality. Through uncertainty, scientists acknowledge the great variability that characterises natural systems and account for it in their assessment of possible scenarios. From this point of view, uncertainty is not ignorance, but it rather provides a great deal of information that is needed to inform decision making. To find effective ways to bridge the gap between these different meaning of uncertainty, we asked high-school students for assistance. With their help, we gathered definitions of the term 'uncertainty' interviewing different categories of peoples, including schoolmates and professors, neighbours, families and friends. These definitions will be compared with those provided by scientists, to find differences and similarity. To understand the role of uncertainty on judgment, a hands-on experiment is performed where students will have to estimate the exact time of explosion of party poppers subjected to a variable degree of pull. At the end of the project, the students will express their own understanding of uncertainty in a video, which will be made available for sharing. Materials collected during all the activities will contribute to our understanding of how uncertainty is portrayed and can be better expressed to improve our hazard communication.