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The Uncertainty and Risk Communication of GMOs - With a Focus on Response to the Concept of “Substantial Equivalence” in South Korea

A genetically modified organism (GMO) is one of the first commercial products based on molecular biology and biotechnology, and can be regarded as an aggregate of expectations and concerns about biotechnology. Like any emerging technology, Biotechnology is founded on uncertainties. As the product of biotechnology GMOs are also embraced by those uncertainties. It is impossible to remove or eliminate such uncertainty which is of neither anecdotal nor deviant nature.

Uncertainty, however, does not directly lead to danger. Nevertheless, there is a general tendency to think “uncertainty equals danger.” Whether uncertainty is interpreted as danger depends on the response of an individual, a group, or a county to uncertainty and its complicated contexts. That is, it depends on how uncertainty is communicated. Uncertainty has already become a part of daily living. It is a part of our life and social background. Risk communicators tend to mobilize uncertainty as important resource in risk communication. Scientists and other experts use uncertainty as a rhetorical tool to support their point of view in scientific and technological discussions.

The concept of “substantial equivalence” has constituted the core of discussions about risks of GMOs in the United States and Europe. The dispute over whether GMOs are a new kind of food or an extension of traditional breeding and artificial selection is boundary work. In this respect, GMO risk communication can be said to be boundary demarcation as well as boundary work. The concept of substantial equivalence has changed in the United States and Europe since 2000 in terms of at least three aspects. First, it has been re-defined to put more emphasis on the difference between GM and non-GM food products by using additional phrases in official documents. Second, it has been re-interpreted to raise the issue of scientific uncertainty about risk assessment procedures. Especially in Europe, the norm of safety has changed. Third, it has been no longer used as a basis to justify the argument for no need for risk assessment. The conceptual change of "substantial equivalence" is involved in the communication about the uncertainty of GMOs. It can be regarded as a process of boundary demarcation regarding the uncertainty of GMOs.

This paper attempts to examine the risk communication about GMOs, the product of biotechnology, in South Korea, with a focus on the concept of substantial equivalence. Countries may show their own unique response to the concept of substantial equivalence as it is the core of GMO risk communication. Reviewing how various actors, such as the government and NGOs, understood and discussed the concept of substantial equivalence in the debate on the acceptance of GMOs in South Korea, this paper examines the characteristics of GMO risk communication in the country. The identification of such characteristics will be also helpful to understand the perception of various parties involved in biotechnology in general.