The diamond model of social response within an agent-based approach*

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Among many different subjects, opinion dynamics is one of the most studied in the field of sociophysics. Models of opinion dynamics are often the best starting point to describe many other complex social and economics phenomena, like innovation diffusion or consumer choices in oligopoly markets. The public opinion is an aggregate outcome of individual opinions (political preferences, consumer choices, etc.). Therefore, to build a model, which describes the dynamics of the public opinion, one needs to model how individual opinions change. A key issue is how to model this process in agreement with Einstein's "*simple but no simpler strategy*". It is a reasonable approach to look at the ideas of social psychologists, because they focus on an individual's behavior when subject to influence from others. This strategy should guarantee that the model would not be too simple. Yet, physicists might fear that such a model would be too complex.

This fear can be allayed, however, since most models of social response are very simple. In this talk I will present a model of social response known as the *diamond model*. It has been used by social psychologists for over 50 years and is particularly useful in building agent-based models of opinion dynamics, because it gives clear and explicit operational definitions of basic types of social response. In fact, the diamond model is actually a ready recipe for a microscopic model of opinion dynamics. In this talk, I will present the logic of the diamond model as well as its implications for agent-based modeling in socio- and econophysics.

** Joint work with **Paul R. Nail** from the Department of Psychology and Counseling, University of Central Arkansas, USA.*

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[3] K. Byrka, A. Jędrzejewski, K. Sznajd-Weron, R. Weron (2016) *Difficulty is critical: The importance of social factors in modeling diffusion of green products and practices*, Renewable and Sustainable Energy Reviews 62, 723-735.

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