# Human Interaction Dynamics (HID):

# Developing a Complexity Research Agenda

## Caucus Proposal
## Proposed to the Academy of Management 2012 Meeting

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There is an increasing recognition that the link between individual action and organizational processes and outcomes needs to be better understood. At the same time, cross-level research presents unique challenges to traditional methods. Complexity science offers a framework and provides the prospect for new methods that show promise. A research agenda in this area will be developed at this caucus.

The caucus will be cross-functional bringing together more than twenty scholars from various specialties many of whom will be presenting their work at symposia and other venues in the academic program. It will explore the current state and future research potential for the complexity-inspired field of human interaction dynamics (HID). HID uses various techniques and the complex systems theoretical framework to study the nature of fine-grained human interactions and the coarse-grained organizing forms that emerge from these dynamics. Treating human interactions as the unit of analysis, HID explores the unique and heterogeneous detail within the micro-states that occur during interactions - including the rules that govern these interactions, how they are enacted, and how they change. This heterogeneity makes the human interaction very different from the types of interactions normally studied in the natural sciences.

Like the natural sciences, however, coarse-grained structures and properties emerge from these interactions and these emergent forms like firms, business strategies, or organizational capabilities, also interact across levels of analysis to entrain the fine-grained interactions from which they are emerging. The dynamics that provide influence across levels are nonlinear and not easily parsed. However, by defining macro-states of the complex system at the coarse-

grained level, less important details can be ignored. Using a probabilistic approach that takes into account the system's effective complexity, coarse-grained properties and their probable outcomes, such as sales growth or the potential for a innovative product launch, can be modeled and forecasted. This is done with the familiar process of defining random variables and hypothesizing relationships among them. HID seeks to use complex systems models and techniques to shed additional light on efficacy of this process without ignoring the underlying detail of individual potency.

At this caucus, various conceptual and methodological hurdles involved in this effort will be discussed including mixed methods such as qualitative, quantitative and computational modeling approaches. It will explore various aspects of HID including: the nature of the individual interaction; empirical studies that explore management and organizations through a complexity lens; complexity as applied to leadership, organizational change processes, and business strategy; and the use of computational and analytical models, their strengths and limitations. The caucus will provide the opportunity for all of these scholars to discuss how to coordinate and collaborate to further an HID research agenda as applied to management.

The Academy of Management has an interest in becoming an important supporter of this emerging science by including this perspective into its agenda. These ideas will be followed up and reported on at the website: www.complexityandsociety.com