The InterSci Complexity wiki http://intersci.ss.uci.edu/wiki

a UC wiki including the complexity Community portal and HSC events

Event 1 Oct 05, 2007: Friday, 1:00-3:00 telecast from UCLA to UCR A139 Olmsted Hall, UCI 3030 Anteater I&R Bldg, UCSD 260 Galbraith Hall

Mark A. R. Kleiman, UCLA Prof. of Public Policy, Public Affairs and Associate, Human Complex Systems (UCLA HCS) - Field/Subfield: Public Policy and Criminology/Game Theory and Simulation.
“The Dynamics of Deterrence”
a live telecast of the Marschak Colloquium from UCLA
http://eclectic.ss.uci.edu/~drwhite/center/cac.html#Kleiman
cosponsored by the UCLA Department of Economics and the UCLA Human Complex Systems Program

Event 2 Oct 12, 2007: Friday, 1:30-3:00 telecast from UCLA to UCR A139 Olmsted Hall, UCI 3030 Anteater I&R Bldg, UCSD 260 Galbraith Hall

Dario Nardi, UCLA, Co-Director, Human Complex Systems (UCLA HCS) program
“The Multiple Models Approach: Burning Man as a Case Study for the Synergistic Use of Memes Theory, Cultural Theory, and Multi-Agent Mapping”
http://eclectic.ss.uci.edu/~drwhite/center/cac.html#Nardi

Abstract: Potential benefits are explored of "multiple models" analytic approaches modeling the phenomena of an annual emergence of a temporary city -- Burning Man -- in the Nevada desert, based on fieldwork participation and as a foundation for further fieldwork and computer simulation.

Video Conference Locations for Participants

UCLA: 285 Powell Library (HSC 1:30) // C-301 Anderson School (UCLA Marschak 1:00)
UCI: 3030 Teaching, Anteater Learning & Technology Center, corner E. Peltason and Anteater Drive
UCSD: 260 Galbraith Hall UCI course #SocSci 240A UCR: A139 Olmsted Hall
(see map for new UCI location)
**Kleiman Abstract:** Because punishment is scarce, costly, and painful, optimal enforcement strategies will minimize the amount of actual punishment required to effectuate deterrence. If potential offenders are deterrable, increasing the conditional probability of punishment (given violation) can reduce the amount of punishment actually inflicted, by "tipping" a situation from its high-violation equilibrium to its low-violation equilibrium. Compared to random or "equal opportunity" enforcement, dynamically concentrated sanctions can reduce the punishment level necessary to tip the system. Game theory and some simple and robust Monte Carlo simulations demonstrate these results, which, in addition to their potential for reducing both crime and incarceration, may have implications for both management and regulation.

**Nardi Long Abstract:** Potential benefits are explored of "multiple models" analytic approaches modeling the phenomena of an annual emergence of a temporary city -- Burning Man -- in the Nevada desert, based on fieldwork participation and as a foundation for further fieldwork and computer simulation.

The multiple models approach, developed by Howard H. Pattee and others, seeks to end the ongoing struggle in academia between social constructivism and naive realism. It seeks to answer -- in both a philosophical and a practical way -- the question of how we can be consistent with seemingly opposing perspectives: Is knowledge mostly relative and contextual, and thus highly suspect and transient? Or is knowledge mostly absolute and objective, particularly when based upon observed data and empirical measurement? Some might answer this question by saying that the physical sciences work one way while the social sciences work another way. The multiple models approach takes a different tack, allowing for a "yes and yes" answer for the both the physical and social sciences.
The multiple models approach is highly relevant to multi-agent modeling. First, multi-agent simulations generally occur on a computer. While simulationists tend to acknowledge that the simulations are constructed representations, they also tend to utilize the models as if they can produce actionable results. Indeed, an ideal for multi-agent simulation is to utilize empirical data and allow emergent behavior to occur without a causal link back to the simulation's design assumptions or programming. A second reason for the relevance of the multiple models approach is that many social scientists resist the use of analytical models, which is an impediment to the larger adoption of multi-agent modeling and simulation.

So what is the multiple models approach? I will define and illustrate this approach through a case study of Burning Man using an arbitrary selection of three analytical tools: Richard Dawkin's theory of memes, Michael Thompson's framework of Cultural Theory (CT), and multi-agent mapping (the terms and methods commonly used to construct computer simulations). I will not go into critical detail about these analytical tools; rather, I will present them as they are commonly used, with the intent of demonstrating that when utilized together in a coherent way, the resulting picture is more than the sum of the models used incoherently or a single model used to the exclusion of others. It is very important to note that I could use other analytical tools besides these three, but I choose to use them because they lend themselves in an obvious way to Burning Man for the purpose of a presentation. In addition to a synergy of results, the multiple models approach also allows us to acknowledge that our models contain personal, social and cultural biases, yet at the same time proceed in a way that transcends those biases toward knowledge that offers some objectivity.

As part of answering how this can happen, I will explore Burning Man, which is an annual summer event that occurs in the Nevada desert. It involves the construction and deconstruction of a fully functioning city on a playa (ancient lake bed). Among the event's key values are freedom of personal and artistic expression and leaving no footprint of the event when it finishes. There is no phone or Internet service. There is no money or advertisements or sponsors or media except a few embedded reporters. There are no migrant service workers or other divisions by labor and class. There are no trash bins or trash collectors, for each person is responsible. There are theme camps and guidelines for good behavior and a patrol of Nevada rangers, but otherwise there are no laws. The man who started it does not appear and officially says that he "does not exist." When the event is done, nothing remains of the city, ideally not even a wisp of trash.

Burning Man makes a notable case study for multi-agent modeling. Compared to the great majority of festivals -- exemplified most famously by the 1969 Woodstock music festival -- Burning Man is run by and for the attendees in a bottom-up manner, successfully operating on a gift-economy with minimal oversight or planning. It draws upon the values and generative actions of tens of thousands of attendees. In contrast, other festivals traditionally treat a similarly massive audience of attendees to a passive feast of consumption that is planned and monitored from the top down, often resulting in a lack of mindfulness (responsibility) for one's values and habits.

I will also discuss the multiple models approach and illustrate how memes, CT, and multi-agency can be applied, and how the use of multiple models is a key feature of Human Complex Systems M100, which is one of the required methods course for HCS students. I have found that encouraging this approach significantly aids students to think in a more sophisticated (nuanced) way about the topics they research at the end of the course. I will not present a working computer simulation as research has only just begun. As we will discover yet again about emergent multi-agent systems, Burning Man is highly rich in phenomena and implications, making it a challenging project to capture the essence of this event in a computer simulation. One might argue that Burning Man is itself a simulation.

As part of my presentation, I will show photographs of Burning Man for those in the audience who are unfamiliar with it. For those of you who are members of Facebook, you can find a selection of photographs at http://ucla.facebook.com/album.php?aid=2218633&id=2539581