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RICHARD L. DUKES
University of Colorado, Colorado Springs

WORLDS APART

*Collective Action in Simulated
Agrarian and Industrial Societies*

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To Cindy and the boys

who inspired me to get serious about play

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Richard L. Dukes
Colorado Springs, Colorado

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WORLDS APART

CHAPTER ONE

GAMED SIMULATIONS FOR SOCIAL SCIENTISTS

On July 14, 1789, over 7000 Parisians took thousands of muskets from the Hôtel des Invalides and answered the call, "To the Bastille!" They were looking for powder which had been moved to the Bastille from a nearby armory, and the large guns mounted on the walls eighty feet above the ground were a threat to the densely populated tenements which surrounded the Bastille. Those guns were never fired, and assisted by Gardes Françaises and a few cannon, the Parisians stormed and took the Bastille. A decisive step had been taken in the French Revolution.

GAMING IN THE COLLEGE CLASSROOM

Two hundred years after the French Revolution, a college student hurried from a history examination into her social science class. Unavoidably late, she arrived just in time to see half of the students jump up from their chairs in one part of the room to rush over and surround a tightly formed circle of seated classmates on the other side of the room. The standing students linked hands forming a human chain, completely encircling their surprised classmates. When the seated students tried to talk, those who were standing shouted them down and grabbed some white envelopes which they had been holding, spilling colored chips on the floor. The scene reminded the "late student" of the storming of the Bastille, but why were her normally tranquil classmates clashing like the eighteenth-century Parisians?

A few minutes later, she learned that the class had been playing STARPOWER, a game which creates conditions which are conducive to antagonistic encounters such as the storming of the Bastille, student protests in Berkeley or China, or revolution in Iran or the Philippines. Actually, the game is used to teach students about social class systems, but the systematic study of the game over many runs allows social scientists to gain a new perspective on these encounters that is unavailable through other methods.

SCIENTIFIC GAMING

This book explores scientific gaming, an interdisciplinary area of social science. No doubt most readers are familiar with parlor games such as MONOPOLY. Certainly, a fantasy game such as DUNGEONS AND DRAGONS is better known than is STARPOWER. Electronic games are played in virtually every urban area of the world. Who among these game players would recognize the names, SIMSOC (a gamed simulation about society), BAFA' BAFA' (a gamed simulation about intercultural contact), or GHETTO (a gamed simulation about the innercity)?

Despite the fact that the area of scientific gaming has a long history in academia and its own research journal, *Simulation and Games*, many readers still may be unfamiliar with it. They may be surprised to learn of the existence of over two-thousand academic games which have potential uses in scientific gaming (see Horn and Cleaves, 1980).

GAMED SIMULATION

This book is concerned with gamed simulations. They are games which have as their object the gaining of new insights into the selected aspects of the real social world which they mirror. These characteristics separate them from parlor games which do not make as determined an effort to represent reality. Gamed simulations do not require the extensive ability to make believe that is characteristic of fantasy games, but like fantasy games, most gamed simulations depend on an administrator who cooperates with players to make the game work. Gamed simulations differ from most electronic games in the area of social interaction. Players in gamed simulations provide the critical human features of the simulated environment that often are missing in the arcade. STARPOWER, the gamed simulation which this book is about, has not become a household word because, like most gamed simulations, it requires at least ten players and an administrator, so it has not been played widely outside of an educational context.

SOCIAL SCIENCE RESEARCH WITH GAMED SIMULATIONS

The object of social science research with gamed simulations is the study of player behavior and the patterns of social organization which emerge within the simulated environments which gamed simulations create. Thus, gamed simulations provide contexts for testing theories about the real world. Among their many worthwhile qualities, foremost is their ability to abstract only the most important features of the phenomena which they model and to allow the replication of these features in a virtually unlimited number of runs. This feature will appeal to even the most hardnosed quantitative researcher. On the other hand, like their more popular relatives, gamed simulations first and foremost are fun, and this aspect makes research with them particularly appealing to qualitative researchers who emphasize human meaning and understanding. Gamed simulations stimulate a playful approach to inquiry which Phillips (1973) has argued,

allow[s] us to confront our own experience, to pay attention to what we have seen, heard, felt and wondered about, and to what we already know. . . . Play may not only give reign to imagination, intuition, and creative urges, but may help us to see more clearly (Phillips, 1973: 162-165).

GAMES VERSUS REAL LIFE

The book is titled, *Worlds Apart* in order to emphasize the fact that the world of gamed simulation and the world of "real life" are not the same. On one hand, gamed simulations create social systems that are abstracted from the social world as a whole, and play within these systems, as Coleman (1968a) has said, is sort of a "time out" from the rest of social life. On the other hand as Wolf argues, games assert their own reality which is more important than real life. She says,

Because of the immediacy of the situation, the game experience becomes larger than real life and occupies the whole field of societal perception (Wolf, 1972: 67).

This otherworldliness of gamed simulations is not a fault, because the gaming experience for players is real even though players are transported from a world with which they are familiar to one with which they are not.

THE INDUSTRIAL REVOLUTION

Europeans of the late eighteenth century saw the replacement of an order based on kinship and land by one based upon power and industry. Hobsbawm writes that the industrial revolution is,

the greatest transformation in human history since the remote times when men invented agriculture and metallurgy, writing, the city and the state (Hobsbawm, 1962: 17).

These truly millennial changes have not been consolidated on a global level in the almost 250 years since the industrial revolution began. Both the magnitude and the pervasiveness of the industrial revolution have captured the attention of scholars in almost every discipline, and their writings are rich in imagery concerning the world before industrialization and the one which replaced it. This thought has yielded two almost polar opposite ideal types of societies, industrial and agrarian, which form the basis of research reported in this volume.

A second reason for calling this book *Worlds Apart* is to emphasize the tremendous differences between these two types of societies. The gamed simulation, STARPOWER, has been modified to create the social class systems of these two divergent worlds. Since no agrarian or industrial societies ever have existed in a pure form, simulation offers an opportunity to study them which is not possible using other methodologies.

STARPOWER

The gamed simulation, STARPOWER, models the stratification system of a society. The first play of the game produced a near riot, says R. Garry Shirts, its creator, and "the game has been going very well since then" (Coppard and Goodman, 1977: 306). His comments represent somewhat of an understatement, since STARPOWER probably is the all time most widely played gamed simulation.

The game models social processes that are of great interest to social scientists in the study of class systems and antagonistic encounters in both agrarian and industrial societies. STARPOWER creates a situation in which players strive to become (and to remain) members of the upper class. Mobility between classes takes place, and upper class members are given the complete authority to make the rules. Often this authority is used to repress the lower class. Repression may provide the impetus for it to organize and rebel against the rulemakers. In fact, it was this part of the game into which our "late student" walked at the beginning of the chapter.

RESEARCH DESIGN

Research with the game involves two versions of STARPOWER that are created by manipulation of the rules. One version represents an agrarian type of society that is characterized by ascribed status and low possibility of mobility. The other version of the game represents an industrial type of society which is characterized by achieved status and a higher possibility of mobility. The idea of a fixed volume of trade and wealth in the agrarian type is replaced by one of "unlimited progress in a free and expanding economy" which Ashton (1948: 22) cites as the central feature of the industrial type.

Findings reported in this volume are based upon sixty-four runs of STARPOWER. Thirty-two of the runs represented an agrarian type of society, and thirty-two runs represented an industrial type of society.

STRATIFICATION IN AGRARIAN AND INDUSTRIAL SOCIETY CONTRASTED

France of the late eighteenth century still was an agrarian society, and one of the important factors in the revolution was a peasant demand for land, a fixed asset controlled by the gentry. Compare these fixed assets to variable ones which are generated in the market for new products in modern nations. In the late nineteen-seventies, Steve Jobs, the son of a machinist, sold his Volkswagen bus, so he and a friend could start Apple Computers. He was the largest stockholder in the corporation, and his success was mercurial.

When asked about it, Steve said,

I was worth a million dollars on paper when I was twenty-three, ten million when I was twenty-four, and a hundred million when I was twenty-five. I had several years to figure out what I thought about all this stuff before it got to epidemic proportions (Gardner, 1984: 21-22).

An open opportunity structure in the society plus plenty of talent and hard work allowed Jobs to succeed, but what about those who do not? In *Hidden Injuries of Class*, Sennett and Cobb (1972) found that those who do not succeed blame themselves more than they blame the system of stratification. Individuals who compete successfully are apt to keep on competing, and the "injured" are unlikely to engage in antagonistic encounters with them.

Had our "late student" walked into the classroom at the same point in the industrial version of STARPOWER, she might have seen players trading furiously with whoever was nearest to them in order to earn as many points as possible. She even might have seen a Steve Jobs.

By the late nineteen-eighties Steve had been removed from his position at Apple, and he was in the process of launching another company. This removal was similar to a process in STARPOWER whereby a player can be expelled from a group by a majority vote of the players in it. Expulsion can happen in either the agrarian or the industrial version of the game, but the consequences are dire in the agrarian version because of the closed nature of the opportunity structure. Once someone loses a position in the upper class, recovery is almost impossible because additional points are so difficult to earn. In the industrial version of STARPOWER, an expelled player may just "start another company."

The emphasis on individuals of this discussion may have obscured the richness of their collective interactions in the antagonistic encounters that are generated in STARPOWER. The examination of collective action is the focus of the entire project, and the patterns of conflict and change which took place in the simulated societies are quite interesting.

FINDINGS ABOUT CONFLICT AND CHANGE

Eleven of the sixty-four simulated societies underwent drastic change. In four of the eleven societies, the upper class members completely repressed the lower class by ending the game. In three of the eleven societies the upper class group collapsed. In four of the eleven societies, the lower class members rebelled by erasing the blackboard, taking chips of the upper class members, or by preventing them from trading through physical restraint. Of the eleven societies which underwent drastic change, nine were of the agrarian type and two were of the industrial type.

The type of society is the framework within which all other activity takes place. Like the storming of the Bastille, real stories are contained in the events which led up to the collective encounters and in the ones which followed them. For instance, three weeks before the storming of the Bastille, the Estates General declared resolutions of the widely popular National Assembly to be null and void. The feudal system was to remain intact. Rioting broke out all over the city. Then three days before Bastille, the head of the National Assembly was sent into exile, and a full scale insurrection lasting several days featured the search for arms. It set the stage for the famous encounter of July 14.

Had our "late student" entered the classroom five minutes earlier, she might have heard members of the lower class asking the upper class rulemakers to increase the value of the lowest chips. She would have seen them write the new rule that forbade lower class members to trade with each other. She would have understood more fully the context in which the lower class students organized themselves and surrounded their classmates. And she would have been struck by the similarity between what was happening in her social science course and events in the world outside the classroom, because like the French Revolution, after the collective action the society was changed fundamentally, and the social classes never again returned to patterns that were established in earlier times.

WHAT IS A GAMED SIMULATION?

A gamed simulation is a unique combination of a game and a simulation that profits from its hybrid nature. Games may be thought of as activities in which interactions by players are given meaning. Suits (1967) has identified the process by which meaning is created. He concludes that to play a game is,

to engage in activity directed toward bringing about a specific state of affairs, using only means permitted by specific rules, where the means permitted by the rules are more limited in scope than they would be in the absence of the rules, and where the sole reason for accepting such limitations is to make possible such activity (Suits, 1967: 156).

Competition is not a necessary condition for a game, but usually goal attainment is structured by the rules so that competition (and perhaps also cooperation) becomes a vehicle for it. Games, then, are activities which have goals and rules. As such, they are not easily distinguishable from many other facets of social life.

Games as Analogies To Real Life

Huizinga (1955) characterizes humans as players and culture as the arena. Long (1958) has described the human community as an ecology of games. McCain and Segal (1969) have depicted science as a game, and Berne (1964) portrays the game qualities of social interaction. In identifying a game as a "caricature of social life," Coleman ably describes these links.

. . . a game is a . . . play upon life in general, it induces, in a restricted and well-defined context, the same kinds of motivations and behaviors that occur in the broader contexts of life where we play for keeps (Coleman, 1968b: 29).

Variables and Constants

The link between games and the real world is conceptualized more adequately as a constant than as a variable for a particular socio-cultural context. Social reality in some cultures is more gamelike than it is in others. By operating the game within a single cultural context, the effect is held constant. In the

simulation part of gamed simulations the relation of the gamed simulation to its referent system becomes a variable. It is in this area that the validity of a simulation takes on its proper meaning.

Nominal and Real Definitions

Another way to present the distinction between game and simulation is to adopt Bierstedt's solution to the nominalist/realist debate.

A nominal definition (sometimes called a verbal definition) "is a declaration of intention to use a certain word or phrase as a substitute for another word or phrase" (Bierstedt, 1959: 131 quoting Easton, 1933: 295).

The game aspect of gamed simulation may be likened to a nominal definition. The measure of a game is its utility, its ability to generate a more or less closed system of meaning for players. The game itself makes no truth claims. It does not assert anything about some referent system. The fact that games in general have meaning within a social system is important, but it is not the crucial issue.

On the other hand, real definitions make truth claims. They assert something about the referent. They are a product of research. In a real definition,

we no longer want to know what the word stands for in terms of other symbols, but what the referent of the concept is, in terms of other symbols, and what its properties are--especially those properties that enable us to use *this* word, with its own independent meaning, as a terminological and logical equivalent (Bierstedt, 1959: 131; italics appear in the original text).

The simulation aspect of a gamed simulation is closer to the notion of real definitions than is the game aspect. These distinctions are outlined in Figure 1-1.

Autotelic Behavior: Game

The analytical distinction between games and play often is made as a way in which to simplify the definition of play. Inbar (1970) felt that the "play aspect" of gamed simulations must be made clear, or the whole definition of games breaks down. He proposed the concept of autotelic behavior as a way of dealing with this problem. Autotelic behavior is "engaged in for its own sake." As such, "it constitutes an end in itself" (Inbar, 1970: 1; this discussion also may be found in Inbar and Stoll, 1970). The concept of autotelic behavior is approached on three levels: formal characteristics of games (which were discussed above), psychological definitions of games, and social definitions of games.

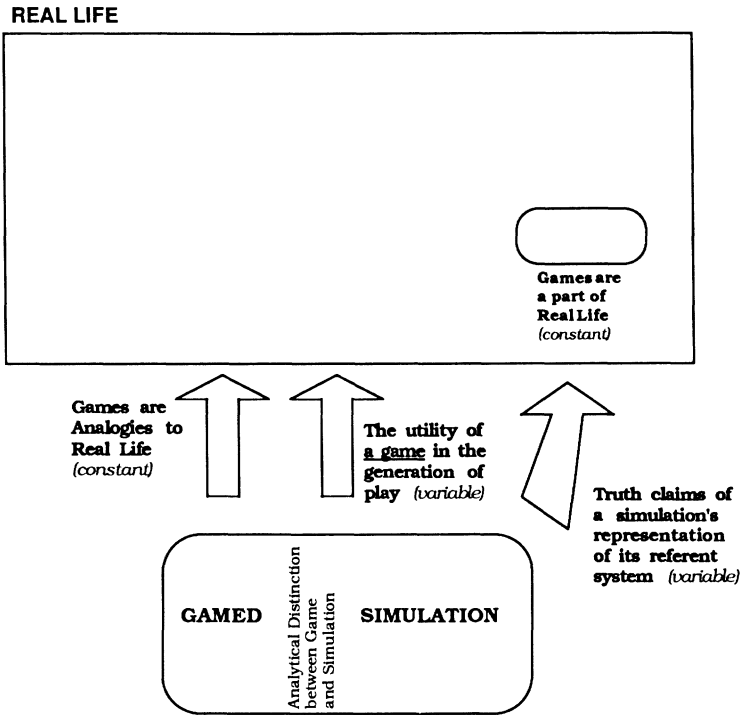


Figure 1-1: Distinctions Between Real Life and Gamed Simulations

Autotelic Behavior: Game Situation

When a player has accepted a game psychologically,

only by respecting the rules is there meaning in the activity. Hence, the psychological disposition elicited is to accept as binding whatever rules define the game. This is the essence of the "play spirit" . . . the goal has acquired an intrinsic value independent of the constraints (Inbar, 1970: 6).

The social definition of a game involves separating game events from the business of life. Figure 1-2 illustrates Inbar's point of view. The concept of autotelic behavior explains similarities between games and many other social situations (even wars, for instance) which have similar formal characteristics. It explains how some games can lose the play spirit and become deadly serious when valuable payoffs are a result of winning, i.e., the social definition of the game becomes similar to other activities in life. It also explains how games spring up in many "serious" social situations when participants adopt a play spirit which overcomes the prevailing social definitions of seriousness.