

THE MODEL UNDERLYING SIMSOC

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March, 1977

CRSO Working Paper \$152
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We number ourselves among those game designers who advocate having an explicit model in mind in developing a game. If applied to SIMSOC, such advocacy must be seen as an example of "Do as 1 say, not as I do." In fact, SIMSOC in various versions has been around since 1964, and a new edition will be forthcoming in 1978. This paper represents the first attempt to explicate the underlying model fully.

Why so belated? For better or worse, the development of SIMSOC has followed a largely inductive process. That it contains an implicit model has been obvious, and parts of that model have been suggested both in the Instructor's Manual which accompanies the game and in a separate article by one of us (Gamson, 1971). There are substantial advantages to be gained by making this implicit model fully explicit, and we will attempt to demonstrate them in this paper. In it, we assume familiarity with the second edition, published in 1972.

Making the model explicit enables us to identify certain design problems with the present version of the game and to suggest rule modifications that more fully realize the demands of the model. We will criticize the current version, discuss the changes that will be introduced in the forthcoming edition, and attempt to draw from these changes some generalizations about the design principles involved.

## The Model

At the Start. At the beginning of SIMSOC, one could hardiy say that a society exists. In fact, the participants face the task of estab-
lishing a social order under a very difficult and trying set of conditions. Let's examine these unpromising conditions in some detall.

1. Extreme inequality by individuals and regions. A handful of people control the major resources in the society including the means of subsistence, communication, and production. They not only possess present resources, but they have continuing control of future resources if they are able to maintain their positions. Others not only lack resources but are in a state of dependence for mere survival. From the very beginning of the society, there are clearly visible haves and have-nots.

The privileged members of society are distributed by region such that there is one region with some abundance, some more or less self-sufficient regions, and one with nothing. The problem of extreme inequality of power and wealth is not merely a matter of individual differences but is overlaid with geography. There are have and have-not regions as well as individuals.
2. Subsistence scarcity. There is an imminent societal crisis brewing around the lack of sufficient subsistence for the present population. The problem is not merely one of distribution of subsistence, because there simply is not enough to go around without "importing" additional subsistence from the coordinator. Participants are unaware of this imminent crisis, but it looms on the horizon, and they will soon be forced to deal with it in some way.
3. Communication barriers. There are powerful communication barriers between regions with free communication within regions. While some individuals possess the means for overcoming some of these barriers, these means are themselves subject to the unequal distribution described above. It is particularly difficult for the deprived region to communicate with other members of the society, since initial commication must come through outside initiative. Thus, the deprived region is isolated as well as
deprived, and commication among other regions is difficult.
4. Non-legitimacy of privilege. Participants all know that the wealthy and powerful hold their position on arbitrary grounds. There is no justifying ideology to defend this privilege, no sense in which anyone could regard the privileged as more deserving than the unprivileged. While it would be too strong to call the privilege "illegitimate;" it is clearly non-legitimate. The privileged hold their position because they are luckier, not more virtuous or deserving in some way.
5. Poverty of culture. There is a general lack of shared experience and expectations. Members of the society have no shared history in the society nor clear expectations about what to expect. They bring shared culture and language with them; but its applicability to the current situation is unclear. Normative expectations are ambiguous or non-existent and, at best, very fluid and changing.
6. Lack of government. There is no organized capacity for making collective decisions or dealing with problems in a collective way. No individual or group exercises any legitimate authority over anyone. No mechanisms exist for making collective decisions or dealing with crises that might arise.
7. Lack of infra-structure. There is no organization below the level of the total society. The basic groups do not exist in anything more than name. They consist only of specific individuals who control resources, and are not functioning groups. No loyalties or support structures for these groups exist. In short, there is not yet any structure to support the functions which the groups have been assigned by the rules.
8. Diversity of personal goals and lack of clarity on how to achieve

[^0]of which conflict with each other or conflict with societal and group' goals. The goals they are pursuing are independent of any means provided by the society. Thus, there is no integration of personal goals and social position, but rather a general state of uncertainty resulting from the lack of culture and social organization. Most people don't have any very clear idea of how to go about trying to fulfill their personal goals.

By any reckoning, this is a formidable set of problems and constraints. The challenge of dealing with them provides the dynamic by which the game runs.

## Nature of the Model

The model will describe the central processes in SIMSOC as involving three phases. Each phase presents the members of the society with a characteristic set of issues or dilemmas. The participants can deal with these dilemmas in a number of different ways but it is possible to classify these ways more abstractly into a very small number. The model suggests why some of these ways are more likely to occur than others.
The way problems are handled in the first phase affects the precise form in which the issues of the next phase are presented to participants. Consequently, the model is rather complicated, for we must describe the possible outcomes of each phase and follow their path into subsequent phases.

## The First Phase

The first phase is characterized by a number of processes which occur simultaneousiy and are resolved in a limited number of ways. The most central process is one of mobilization around the problem of the provision of subsistence to the participants -- that is, overcoming the problem of scarcity. How this general problem gets resolved depends on the handing
of the following more specific problems:

1. Organization of the basic groups. The easiest and most common path is for basic groups to organize on a regional basis. Because one is In direct, face-to-face commication with one's fellow region members and must travel to coumunicate with others, it is most convenient to build an organization around this nucleus. This means that political parties inftially will take on a regional character as will industries and other groups.

This process is one in which individual positions of privilege become located institutionally in a home region. Regional organization and organization of the groups are virtually synonymous in this phase. The infra-structure that develops, being regionally based, increases the distrust between the privileged from different regions. If some of the privileged are also minority group members, this mitigates further against the development of a cohesive elite. The privileged are unlikely to develop a general "ruling class" consciousness or to coordinate the pursuit of their interests in this phase.
2. Organization of the non-deprived regions. As indicated above, we expect non-group heads in a region to become employees and, in some cases, to take over the leadership of basic groups operating in their region. Because of heavy interlocks between group memberships within a region, each region will become a complex of the basic groups within it. For example, an industry and a political party may come to act as a single unit in many situations.

There may be internal power struggles between the head of a group and employees, or between group heads in the same region. Some group heads may sponsor a collective leadership while others may maintain various marks of privilege and power that differentiate them from the
other members of their region. In general, given the precarious nature of life in SIMSOC during this phase, we expect privileged individuals to attempt to maintain their position of privilege and to share it only reluctantly. Close alliances with one or two trusted lieutenants seem more likely than region-wide decision-making and control of basic groups. The abundant region(Green) is particularly likely to encounter problems of internal cohesiveness, as most members are wealthy enough to be relatively autonomous. Interdependencles among members will not be too apparent at this stage.
3. Organization of the deprived region. While the problem facing the better-off regions is that of the institutionalization of privilege, the deprived region (Red) faces the problem of survival. They face it under extremely difficult circumstances. They not only lack subsistence, but they are isolated by the absence of any means of travel. They have no way of initiating communication with other members of the society and 1ittie or no internal differentiation among themselves.

Under the circumatances, their organization ls likely to focus on issues of getting jobs and subsistence for members. During this phase, issues of control over resources are not yet central although they may be raised.
4. Regional integration. At a collective level, the participants are dealing with the problem of regional integration. In a typically non-planned way, they will establish some pattern of communication (or non-communication) with the deprived region and will develop some form of relationship (or lack of relationship). The manner in which the basic groups and regions become established and interact will determine the outcome of Phase One.

## Outcomes of Phase One

We will describe the outcomes of Phase One in terms of a number of ideal-typical patterns and will attempt to state the conditions which give rise to one or another. In any actual SIMSOC, one is likely to find elements of more than one of these archetypes which we distinguish here analytically.

1. Organized challenge to privilege. There are various reasons why we expect this to be the most likely response to the problems of Phase One with the challenge spearheaded by members of the deprived region. Members of the deprived region are typically left alone with ample time to become aware of their common plight. Their peril and concern for survival in the absence of internal differences (except for Individual goals) is conducive to solidarity and a sense of common fate Their high ratio of in-group interaction combined with little or no communication with outsiders reinforces this. Given the lack of infrastructure and government in the better-off regions, it is extremely difficult for members of these regions to organize a rapid response to the problems of the Red region even with the best of good will. While members of the other regions are still struggling with the tasks of building an infra-structure, the impatience of the Red region for some societal response grows rapidly.

Since the privileged hold their position through no special merit, members of the Red region are likely to develop a hostile attitude toward the privileged rather quickly. If discussions of the plight of the deprived region are taking place, this is typically invisible to the members of the Red region and takes place without their participation. Thus, they tend to be presented with "solutions" to "their problem" as a fait accompli.

Far from sparking gratitude on the part of the Red region, such efforts
frequently increase their resentment and anger. Thus, the very efforts of other societal members to deal with the problem of scarcity are likely to stimulate the confrontation.

The political organization of the deprived region is facilitated by the lack of competing tasks in this region. No one has any basic group business to attend to or any other kind of competition for their attention and energy. In contrast, the members of other regions have individual tasks of various sorts -- the disposition of travel and subsistence tickets and the organization of the basic groups -- that divert their attention from working on the problem of scarcity. Thus, the problem receives secondary priority in the rest of the society during a period in which it is the sole preoccupation of the deprived region.

In sum, the organization of a challenge to privilege by the deprived region rests on the convergence of two sets of factors: those that make it difficult for the other members to respond rapidly and effectively to the problems of scarcity (communication barriers, poverty of culture, lack of government, and lack of infra-structure); and those that make it likely that members of the Red region will develop strong distrust toward members of other regions (vulnerability and insecurity from lack of resources, isolation, and non-legitimacy of privilege).

There are also factors working against this dominant outcome. Within the deprived region, there are problems arising from the poverty of culture and diversity of personal goals that may handicap organization for collective action. Outside of the Red region, there are resource holders who have the wherewithal to make a variety of rapid individual responses to the scarcity problem. These efforts may avert a challenge to privilege. We will briefly examine some of these alternative outcomes.

## 2. Collapse of the Red region. In this solution, members of the

Red region dic or make individual arrangements with power holders in other regions, and move into the region of their sponsor. The region disappears and survivors are integrated. We would expect this to happen under the following relatively unusual conditions: (a) members of the deprived region are sufficiently different in their goals and common understandings that they are unable to reach any kind of agreement on any collective way of dealing with their common plight and (b) resource holders in other regions move rapidly to coopt emergent leadership in the deprived region. This is most likely to happen when some individual members of the deprived region are involved in prior social relationships with members of other regions who are concerned enough to look after them and act before the consciousness of the deprived region has had an opportunity to gel.
3. Unstable dependency. In this outcome, the population of the deprived region becomes, at least temporarily, ${ }^{2}$ ward $\neq$ of the privileged. Members
Fhere provided with jobs and subsistence and, if needed to maintain their loyalty, a certain amount of luxury. Control of major societal resources, however, lies completely outside of the region.

The factors mitigating against this solution are those which make it difficult for members of other regions to act in a coordinated way communication barriers, poverty of culture, lack of government, lack of infra-structure, and diversity of personal goals. Furthermore, it is difficult to stabilize this outcome more than temporarily because of those factors described above that push the deprived region toward an active challenge to privilege

The most lifkely form in which such an outcome might emerge in this phase is through the sponsorship of an individual or sing.le region which
builds an alliance with the deprived region based on an exchange of subsistence and other resources for polftical support or work. Members of the deprived region may accept such a solution on a temporary basis tc insure their survival but it is likely to be unstable and merely to delay the challenge of the deprived region as long as the forces br collective action remain intact (i.e., continued dependency on the privileged, communication primarily within the region, non-legitimacy of privilege). These variables can be affected in important ways by the participants, however, so stabilization of the dependency during the second phase is a possible outcome.

## Phase Two

The central processes in phase two center on what kind of political, economic, and social organization the society is to have. Typically,
a power struggle ensữes concerning these issues, a struggle that can take two forms:

1. The revolutionary struggle. This struggle is characterized by the deprived region's demand for some form of public control of resources and the means of production in the society and the abolition of private ownership and control. Typically, the demand is resisted by privileged members of the society who regard it as unnecessary and uncalled for. The outcome of this struggle depends on a number of factors that will be discussed below including the presence of a second type of power struggle.
2. Struggie among elites. This struggle is characterized by the jockeying for power between different groups of the privileged, typically taking the form of regional conflict. In this struggle, region-based groups or powerful individuals vie with each other for the status of top dog. This struggle may be "ideologized" into a dispute about the politicol,
social, or economic organization of the society, or it may be openly over issues of pover itself. The need for support in such struggles will produce a tendency for the groups to pursue some appeal for public support -for example, a plan for raising the National Indicators.

One, both, or neither of these struggles may be present in a given smisoc, depending in part on the state of the society at the end of phase onc. Using each of the outcomes from phase one as a starting point, we will indicate the likely progression into the second phase.

1. From organized challenge to dual power struggle. The most likely axes of: conflict in phase two, when there is an organized challenge from the dearived region, are the occurrence of conf1ict between the revolutionary movement and the privileged combined with conflict within the elite. All of those factors mentioned which male it difficult for the privileged members of society to work together are conducive to the development of conflict and distrust within the elite. The problems of unequal distribution of resources, of communication problems, of lack of legitimate authority, and of matching individual and societal goals, are chronic ones which continue to operate during this phase. Meanwhile, the members of the Red region, having survived the threat of starvation, will begin to expand the scope of their challenge and press it more forcefully.

In some societies, skiliful organization among the elites may enable them to present a more or less united front to the challenge of the deprived region. In this case, the power struggle will focus on the single axis of conflict between the haves and have nots, Simriots, work strikes, and hunger strikes are especially likely to occur under these circumstances. Such actions are also likely to occur during rhase One before members of the deprived region have had an opportunfty to build any alliances with members of other regions.

It is also possible that the organized challenge of the deprived region will dissipate and fall apart through internal squabbling fin the deprived region and external threats and inducements to individual members. If this occurs, then the only axis of conflict will be within the elites, with members of the deprived region playing minor roles as supporters of one or another powerful faction.

Finally, it is possible that an organized elite will face a weak and easily dissipated challenge, and a power struggle will not occur at all or only in highly attentuated form. Such a society would move rather quickly to phase three. For all of the reasons that make a dual power struggle most likely, this possibility is the least likely alternative.
2. From collapse of the deprived region to elite atruggle. In the absence of an organized challenge from the deprived repion, the most likely process in Phase Two is a struggle for power among the other region groups. It is possible, but less likely, that the privileged members of the society will overcome the various obstacles to unified, collective action and will agree on some governmental structure with littile conflift. Again, such a society would move rapidly to Phase Three.
3. From unstable dependency to dual power struggle. Unstable dependency can easily enough lead to an organized challenge from the deprived region during this second phase. Having secured some means of survival and having built some alliances with members of other regions in the process, the members of the deprived region may become emboldened. Concern about survival during Phase One allows members of the deprived region to accept a subordinate position as a temporary expedient. At this point, their concern turns increasingly from obtaining subsistence and other resources to obtaining a say in the control and distribution of resources in the society.

The fact that the organized challenge emerges somewhat later in this scenario has certain consequences. Survival has depended on support from some members of the privileged regions. The opportunity to play off members of the elite against one another is likely to be present in various forms for members of the deprived region. Thus, a dual power struggle is quite likely to emerge in these circumstances.

But there is also a much larger probability that unstable dependency will turn into stable or institutionalized dependency. If no organized challenge has emexged during the first phase, the dependency relationships established during that phase may grow enough during the second phase to maintain the deprived region as a protectorate of a more powerful region or group. In thits case, no revolutionary struggle will ensue although an elite struggle is still quite likely with the members of the deprived region serving as minor actors in the struggle.

## Outcomes of Phase Two

Many of these paths converge on the same outcomes, leaving four possible results of the second phase:

1. Societal collapse. If the power struggles of the second phase are prolonged and intense, they may lower the National Indicators to such an extent that the society will collapse. This is most likely in the case of a dual struggle which is likely to take the longest to resolve. Collapse occurs relatively rarely, however, because the intense crisis caused by the falling National Indicators acts as a significant constraint on the power struggle. Warring parties will frequently put aside their differences in the face of a threat to all of their survival.
2. Socialist society. While this is not the most likely outcome, it can occur. It involves the abolition of private control of resources in the
society and the creation of some form of public control over their distribution. Typically, the public control will be in the hands of some council or governnent with representatives from the different regions. In such a solution, it is frequently the case that the deprived region becomes the center of such a government. Ironically, the limited ability of members of the deprived region to travel makes it a logical place for people to meet and negotiate. Leaders from other regions develop the habit of coming to the deprived region to negotiate, and it becones the site of many important meetings and decisions.

In order for this outcome to occur, the members of the deprived region must win outside support from people in other regions. They can do this by taking advantage of sources of cleavage in these other regions. For example, have-not individuals in other regions may find the program of the deprived region ideologically appealing. Some nembers of the elite, conscious of the fragile justification for their own claim on privilege, may join forces with the challenge of the deprived region and lend it tangible support. Or even members of the elite may find it expedient to join a movement that has a clear direction and sense of purpose in a society in which there is ifttle competition in this regard. In sum, the success of the challenge from the deprived region depends on a process of gaining active or tacit support from other members of the society.
3. Stable unrepresentation or institutionalized dependency. Again,
this outcome is not likely, but it can occur under special conditions. It is not likely to occur as long as an organized challenge from the deprived region persists. In the absence of such a challenge and/or the disappearance of the deprived region, it is the most likely result.
Members of the Red region become supporters of one or another faction and receive a flow of rewards, but without any significant sharing of the control of societal resources.

This outcome appears in several concrete forms which we treat here as equivalent. For example, a member of another region moves into the deprived region and runs his group from that region with other members as employees. Or he continues to run the group from outside but guarantees a continued flow of subsistence, travel, and perhaps even Munchie tickets to the population of the region in exchange for continued quiescence and support. It is even possible to turn a basic group over to a member of the deprived region, as long as this person is without any strong regional loyalty and can be trusted to serve the interests of the sponsoring group or Individual.
4. Mixed outcome. In this outcome, the deprived region becomes recognized as a co-equal member of the pressure system in the society. It develops a regular say fin the control of resources. The economic and social organization of the society continues to include substantial degrees of private control of resources. However, this private control is subject to some public regulation by a political body on which members of the deprived region have proportionate representation. An example of such an instrument might be a council, with representatives for fram each region, that collects and distributes subsistence to make sure that all members of the society are provided for and taxes private resource holders for the support of public programs.

For various reasons, some of them extraneous to the game, this outcome seems the most likely one in Phase Two. Participants bring their own ideological predispositions into the game, and this may be a more comfortable solution for most American participants than some of the alternatives. However, there are forces within the game itself that may promote it as well. It is difficult for a deprived minority to attack and destroy the position of those with great resources. Success depends
on an elite that is beset by in-fighting, is inflexible and uncompromising or otherwise given to social control errors, or is attracted by the ideological appeal of the have-nots.

A nore likely elite response is to search for a compromise of some sort that allows for the maintenance of a degree of privilege but with greater limits than before. When such compromises are offered, they are likely to create internal divisions within the deprived region on whether to accept. Splits between "reformers" and "revolutionaries" may develop, thereby weakening the capacity of the deprived region for collective action. Feeling less certain of their internal cohesion and external support in other regions, members of the deprived region may find a compromise solution even more attractive. They may never have demanded more than a sharing of power in the first place so that proposals short of full public control will not be viewed as a compromise at all but as a full-fledged victory.

The likelihood of such a mixed outcome still depends on some organized challenge from the members of the deprived region. If this region disappears or its challenge dissipates, the outcome of phase two is likely to be the institutionalized dependency of the region in a society dominated by private resource holders in the other regions.

## Phase Three

The central process of this phase is the destruction of the hegemony of raising the National Indicators as the collective goal of the society. The quality of life in SIMSOC emerges as an issue. To raise this issue is to reassert personal goals as important.

At the end of Phase Two, as long as the society has not collapsed, the characteristic drop in the National Indicators during Phase One and
much of Phase Two has stabilized, and the Indicators have begun to climb. The society has developed some mechanism for allocating enough resources to Public Programs to rafse National Indicators and has handled most of the problems that tend to lower the National Indicators.

In the process of solving Phase Two problems, a new line of cleavage develops between "leaders" and "masses." The "leaders" may be people who have had privileged positions from the beginning, since there is no doubt that having resources is a help in becoming an influential figure in the society. On the other hand, some may have acquired resources during the course of the game and others may not possess any resources but still have emerged as influential decision-makers. For whatever reason, certain individuals will have emerged as either a formally designated or unofficial ."government."

These leaders continue to be involved in the societal goal of raising the National Indicators and, at the same time, are likely to feel that they are fulfilling their own personal goals. Those who are not central to the political structure in the society begin to question the priority of the National Indicators as a goal. They begin to ask whether a rise in the National Indicators means an improvement in the quality of their personal lives in SIMSOC. The problem for them is boredom. The society is running with the efforts of others and they have nothing interesting left to do except nibble munchies.

A reflection of this phase is the development of a leisure culture. Participants begin to develop Simreligions, to bring guitars and other musical instruments, and to develop recreations of various sorts that are Independent of the game.

Some new challenges may emerge during Phase Three based on a redefinition of the requirements of leadership. It is no longer sufficient
for an individual or a group that wants support to have a plan for dealing with scarcity or raising the National Indicators (which are problems of the past). Now they must have ideas that will enable individuals to meet their personal goals. An increased number of negative goal declarntion cards may start to make Public Commitment a renewed problem.

The emergence of this phase is a signal to end SIMSOC, so it is not meaningful to talk about its outcome. Once a group has developed sufficient social organization, the problems of running the society can be handled with a small amount of energy by a few individuals and there is ifitile lefit for anyone to do. At this point, it is time to discuss and analyze the society in a post-game discussion.

## The Use of Force

Force can be used during any phase of SIMSOC but it tends to serve different functions at different times. During Phase One, the most frequent use of a SIMFORCE is as a device for resource accumulation. In effect, force is used as a form of banditry with the most likely targets being group heads. SIMFORCE used for such purposes are usually created by one or two individuals rather than whole regions or larger groups. During the first phase, privileged members of the society may create a SIMFORCE for personal protection from banditry.

During Phase Two, new SIMFORCE may be created or existing ones used for a somewhat different purpose. Where a power struggle is in progress, force may be used as a way of dealing with a political adversary. In practice, this use may not be easy to differentiate from a vehicle for resource accumulation since group heads are likely to be involved in power struggles and will still be likely targets of force. However, sometimes the targets will have political influence but little or no resources, and the function of force will be clear.

During the late stages of Phase Two or the beginning of. Phase Three, force may be used as a collective device to enforce conformity to some collective decision. In effect, a SNFORCE becomes a law enforcement agency, being used on behalf of a government to collect taxes, punish deviants, and the like. Only when it is used in this fashion is the victim of arrest likely to be given any prior warning of arrest. The emergence of this type of SIMFORCE will typically involve the conversion of an already existing private force into a public one.

Finally, during Phase Three, the function of a force is mischief. Such a force will typically involve one or two individuals who, while they still have some resources, are no longer linked to governing activity in the socicty. Perhaps they have a SIMFORCE left over from an earlier stage and use it to arrest a societal leader as a way of showing that they are still someone to be reckoned with. Or perhaps they have managed to accumulate some resources and, feeling somewhat bored in a stagnating society, they choose, in effect, to throw a bomb to stir up some excitement.

With all of these reasons to use force and the relative ease of employing it, it is not surprising that few SIMSOCs will manage to run their course without any resort to force.

## Schematic Representation of SIMSOC Model



Key: continuous arrow a probable
broken arrow $\quad=$ sometimes
no arrow ararely

## Critique of the Second Edition

Private Life. The model assumes that individuals face some choices between the pursuit of private and public concerns. However, this balance was not effectively realized in the game. In many respects, individuals pursued public concerns by default, having no meaningful private activity or goals to compete for their attention and resources. More specifically, this design problem was manifested in four ways:
(a) Lack of personal consumption. There is no equivalent of private consumption in the old version of the game. Attempts to introduce it through a luxury living option (including a vacation region) were weak and ineffective vehicles for offering this option. This option was not well integrated into the ongoing action of the game and frequently seemed extraneous and irrelevant to the participants. Most individuals with surplus Simbucks had little option other than investing in Public Programs. Thus, the absence of personal consumption helps to solve a dilemua that the members of SIMSOC should be facing: how to attract or command resources for public purposes in the face of competition to use these resources for private purposes.
(b) Narrow range of meaningful individual decisions. Most individuals -- that is, those who were not head of a basic group or agency -- had few if any meaningful decisions to make. While the choices might have an indirect effect, the consequences for others were not immediately apparent. For example, an individual supporting a political party might decide to work for that party or even contribute money but could just as easily ignore political parties altogether without-significant consequences for himself or for the party. The same point applies to support for other basic groups. The individual could receive a job and a salary but had little to offer in return and few choices with consequences.
(c) Lack of meaningful work. In the old version of the game, there was little need for productive labor of any kind. Basic groups had no real reason to hire others, except to prevent unemployment from lowering the National Indicators. Industries really didn't need to hire anyone to solve anagrams, since the head could do it if he or she wished to. JUDCO and MASMED had some modest amount of work to be done but EMPIN, rOP, and SOP had no work for those they hired. With ingenuity, a group could define its own meaningful work but there was nothing built into the structure of the game that made this necessary.
(d) Failure to integrate individual goals. In the old version of the game, individuals were asked to choose a personal goal and to fill out an assessment form which indicated whether they were meeting this goal. There were no real consequences in the game for ignoring individual gonis and the Assessment Form was ineffective in increasing the salience of such goals. As a consequence, most individuals forgot about their personal goals, finding them largely irrelevant for the action taking place.

Taken in combination, these design failures of the earlier edition gave private life a much more attentuated place in the life of SIMSOC than the model intends. We have introduced several changes aimed at overcoming these difficulties.
(a) With respect to personal consumption, the new version introduces a Munchie Bazaar. ${ }^{1}$ Munchie Tickets may be converted into food and beverage
${ }^{1}$ This idea was stimulated by Karen J. Cowles and Robert E. Hauser's SIM ECO SOC, a game based on SIMSOC that emphasizes different processes. Those interested in this variation may wish to write to the authors at the McKecsport campus of the Pennsylvania State University.
at this Munchie Bazaar. The existence of Munchies allows for a number of possibilities that did not exist in the old version.

1) Personal privilege is given a more concrete meaning. In the new version, Permanent Subsistence Tickets are replaced by a Luxury Living Endowment which provide ${ }_{\wedge}^{3}$ subsistence plus a regular supply of Munchie Tickets. Those who purchase a Luxury Living Endowment not only enfoy greater security in subsistence but also a higher standard of living than those who merely have subsistence.
2) The number of Munchie Tickets available to the society as a whole is linked to the Standard of Living Indicator. Furthermore, those with Luxury Living Endowments have first call on the available supply, again making the presence of personal privilege more concrete and operational.
3) Munchie Tickets provide an additional medium of exchange.

Dissatisfied workers may be mollified with Munchie Tickets, for example.
4) Some Munchie Tickets can be distributed at the beginning to represent "inherited" inequalities of wealth along with the inequalities in soctal position.
5) The Munchie Bazaar is, thus, integrated into the ongoing interaction of the game in a number of ways, and personal consumption, through the conversion of Munchie Tickets, becomes part of the game rather than an unconnected, extrancous option.

To function effectively, the Munchie Bazaar must maintain a monopoly of food and beverages available and the bringing of outside refreshments by participants must be explicitly prohibited.
(b) With respect to the narrow range of meaningful individual decisions, we have introduced the concept of support cards. The income of four groups -- POP, SO1, ERPII, and MASMED -- is now dependent on the choices that individual participants make each session. For each of these groups, each

Individual has a card for each session which can be turned in or withheld. (An individual may choose only one of the poHticnl. parties.)

It is true that an individual can still ignore these groups but this now becomes a meaningful choice with consequences. Since it affects others, the choice that he or she makes will be a matter of concern for others, and the individual becomes a target of influence for various groups. Thus, non-support becomes a choice, not simply a matter of forgetfulness. Individuals also have an opportunity to declare in each session whether or not they are meeting their personal goals, and this choice also has consequences in the game which are discussed below.
(c) With respect to the lack of meaningful work, the situntion of each of the basic groups is changed in the new version except for Junco. These groups now have the need for productive labor, although the quality of the work varies in the skill level required and the intrinsic interest.

1) BASIN extracts vowels from short passages. This represents dull, tedious labor. We do not expect it to be voluntarily undertaken by the head of BASIN. Instead, it is likely to be delegated, perhaps to people outside the region. It is error prone work and demands careful. quality control to remain profitable. This change allows for increased differentiation between the BASIN management and work-force and subjects BASIN to potential industrial sabotage.
2) RETSIN (Retail Industry) replaces INNOVIN in the old version, RETSIN produces marketable words from themperinite. This represents slightly more interesting and skilled labor.
3) POP, SOP, EMPIN, and MASMED have a need to gather individual support cards. This is a task that requires a substantial amount of travel and persuasive ability. The head of these groups will have a real need for others' assistance in gathering such support.
(d) With respect to individual goals, we have introduced the Goal Declaration Card. For each session, individuals have an option on whether or not to declare that they are meeting their personal goals. A positive declaration raises the Public Commitment Indicator, a negative declaration
or a-dectarntion-of-etranged-gonts lowers this Indicator. No declaration
leaves things unchanged. While the individual can choose to ignore his
$\wedge^{\text {leaves things unchanged. While the individual can choose to ignore his }}$ individual goals, again this choice has social consequences and, hence, will be a matter of concern to those who are worried about the National Indicators. This ruie change builds in societal concern for individual goal realization.

While private life in SIMSOC has been made more prominent and better integrated by these changes, the major emphasis of the game is still on problems of public life. The game deliberately departs from isomorphism with a real society in this regard. The amount of labor required to produce the products for industries remains deliberately quite small. It can be performed while still leaving large amounts of discretionary time for virtually everybody. Even individuals performing unskilled labor will not have more than a small percentage of their lives in SIMSOC occupied by such labor.

Basic Groups. In the old version, the income of these groups was dependent on the National Indicators but not on their own success in attracting support. A political party, for example, might do a brilliant job of attracting adherents, while its rival was failing dismally. Yet they would each receive the same income and no direct consequences of their differences in support would be visible. Making, income constant and independent of performance was a serious design flaw and undernifned the incentive for these groups to achieve their goals.

We have tried to eliminate this flaw in the new version. While income is still affected by the National Indicators in the same fashition, it is now dependent on support cards turned in by participants for four of the basic groups.
(a) POP and SOP. Their income depends on the number of support cards turned in with individuals prohibited from turning in a card for both parties.
(b) EMPIN. The same rule change applies to EIPIN except that it has no competition in the manner of POP and SOP. EMPIN's income depends on the number of membership cards turned in. Since only memberships of employed members of the society are counted toward EMPIN's income, this group now has a direct stake in keeping unemployment to a minimum, a stake that it lacked in the previous version.
(c) MASMED. There are a number of changes in the new version affecting MASMED including several additional perquisites. MASMFD's income, however, is dependent on the number of subscriptions turned in to the coordinator in a manner similar to that for POP, SOP, and EMPIN. To receive its income, MASMED must persuade members of the society to subscribe.
(d) BASIN and RETSIN. The manufacturing process for the two Industries is somewhat simpler than in the previous edition and the work process has been changed in the manner described above. The functions performed by these industries remain unchanged.
(e) JuDCO. There are no changes here. It is undesirable that JUDCo's income be dependent on the members of the society. To interpret the rules conscientiously, JUDCO must maintain a measure of loyalty to the Coordinator or to the meta-game. Ideally, JUDCO should be a strict constructionist in dealing with efforts to get around the constraints in the game. With
respect to adjudicating internal disputes between conflicting groups within the society, it is perfectly appropriate for JUDCO's social position to influence its decisions. Its income has been increased and it remains` a privileged group in a privileged region. If its interpretations reflect this privileged position, this creates no problems for the game and, in fact, reflects the underlying model. JUDCO's basic income remains dependent on the National. Indicators alone as in the previous version.

## Misce.llaneous Problems.

(a) SIMFORCE removal was unnecessarily complicated and clumsy in the old version. The rules here have been simplified and made more direct.
(b) SIMRIOT. A rule allowing members to lower the National Indicators by engaging in a riot has been added. This gives an additional weapon to discontented members of the society. However, the effects of unemployment on various National Indicators has been reduced somewhat so that the potency of the strike weapon is correspondingly reduced. Furthermore, the new version provides ways of preventing a riot by the posting of a guard. In balance, the Simriot adds an additional option for making trouble but does not significantly alter the total impact possible from such activities.

## Concluding Observations on Game Design

1. The more explicit the model, the easier it is to diagnose design problems and to devisc solutions. One can anticipate the consequences of rule changes without an explicit model, but it is extremely difficult to Judge whether those consequences are desirable or undesirable without such a model. A model provides the basis for evaluating any potential design feature.
2. Participants cannot be expected to pursue goals unless their performance in the game has direct consequences for the achievement of: these goals. The basic mystery of any game is why participants take it seriously. In a simple game where "winning" is clearly defined, the problem is usually invisible. To play means to try to win as defined by the rules within the set of constraints provided.

In more complicated games, therc may be multiple goals or vaguely defined ones. In CLUG, for example, there is an implicit goal. of increasing wealth, but this is nowhere stated in the rules. This goal can easily enough be transformed from increasing personal worth to increasing the collective worth of the community and the game will still function effectively. However, if participants were to pursue some other, arbitrarily chosen goal -- for example, maximizing undeveloped land -- the result would bear little relation to the underlying model.

SIMSOC presents this design problem in the extreme. It offers multiple goals at different levels -- societal, group, and individual. All are vaguely defined. The pursuit of societal goals has been aided by handy indicators that the participants typically use even though they are not asked to do so. During phase three, these goals become an issue. Nevertheless, there is 1ittle problem in gaining acceptance of societal goals because the indicators provided are so contingent on the actions of the participants.

Group goals and individual goals have been problematic in the game precisely because of the gap between actions in the game and consequences for these goals. Group income, like the National Indicators, is a handy operationalization of meeting group goals. A political party garnering a lot of support cards is 1ikely to feel that it is doing well in achieving its goal.

In the new version, the interdependencies between these different levels have been greatly increased. As a consequence, we anticipate that participants will now pursue individual and group goals in a more vigorous way than they have in the past.
3. Self-enforcing rules are better than those which require compliance by participants. A self enforcing rule is one which a participant is motivated to observe for reasons intrinsic to the game. For example, if one wishes traffic to slow to fifteen miles per hour in a residential neighborhood, it is better to have a bump in the road that forces cars to slow down to fifteen miles per hour or risk damage than it is to place a sign prohibiting travel above that speed.

Wherever possible, we have tried to make rules in SIMSOC self-enforcing but there remain some that require the cooperation of the players to enforce. Turning in a travel ticket is a good example. We wish there were a method of making a travel ticket physically necessary to travel, thereby relieving the Coordinator of the burden of having to collect them.

Aside from making rules self-enforcing through physical means, one can do it by offering inducements. Since participants are positively motivated to get inducements, they will observe those rules that lead to them receiving them. The rulc in Monopoly that one gets $\$ 200$ for passing "Go" is never difficult to enforce.

We have tried to keep prohibitions to an absolute minimum, but in the new version we explicitly prohibit certain actions that cannot be made part of self-enforcing rules -- counterfeiting, forgery, stealing, and physical force. As much as possible, the Coordinator's job is one of giving participants things they are entitled to under the rules rather than acting as a watch-dog on their observance.

## Conclusion

SIMSOC has now been played many thousands of times over a period of more than a dozen years. Yet this newest version involves some quite major changes. It is sobering that a game so much used still requires so much change. We are tempted to think that this version will be the last, since, by making the model fully explicit at last, we can specify the raison d'etre for any rule. Until this version is sufficiently tested through use, we cannot be certain if our understanding is ns complete as we think. But if we are correct, the SIMSOC experience contains a strange lesson for designers: An explicit model is typically thought of as the beginning of the design process. One starts with a model and ends with a game. But SIMSOC started with a game and ended with a model.

## References

Gamson, William A. (1971) "SIMSOC: Establishing Social Order in a Simulated Society," Simulation and Games, Vol. 2 (September), pp. 287-308.

## SIMSOC

## (Draft of Revised Rules)

January, 1977
W. Gamson

## INTRODUCTION

You will shortly be participating as a citizen in a simulated society. ${ }^{1}$ If the society is to be a valuable learning experience, we will need your cooperation. Cooperation in this context means taking your objectives in the society seriously. We have tried to create a situation in which each of you has goals that depend on other people in the society for their achievement. Some of your goals will be held in common with other people, and some will bring you into conflict with others. Inevitably, some of you will do better than others in achieving your goals but, unlike some games, there are no clear winners or losers.

You represent only some of the citizens of your society. Other citizens are present only in imaginary form -- that is, certain rules of the game are based on assumptions about the reactions of these imaginary citizens. Nevertheless, this is basically your society to do with as you like.

Coordinator's Role
The coordinator's role is kept to an absolute minimum once the society is in process. He (or she) will maintain the bank, receive forms, and carry out other tasks specified in the manual to make the game operate. If questions about the rules arise, he will guide you to the appropriate section of the manual and will help you locate
${ }^{1}$ If you are unfamiliar with game simulations, you may wish to read the articles by Abt (pp. 37-39) and Raser (pp. 40-44) in this manual before reading the rules of SIMSOC.
appropriate forms but he will not interpret ambiguous rules nor will he advise you how to deal with situations that arise in the game. The coordinator will do everything he can to aviod becoming enmeshed as a participant in your society once it has begun.

## Nature of the Rules

The rules in the manual are intended to represent certain "natural" forces in the real world rather than man-made laws. To ignore them by cheating simply renders the game pointless and meaningless. The coorf$d_{i}$ inator should not be put in the position of having to monitor your observance of the rules but should be able to depend on your cooperation to achieve the larger purpose of learning. The rules of the manual, as you will see, allow great leeway for you to add your own agreements and rules. The agreements that you make among yourselves are your own responsibility -- they represent man-made laws rather than "natural" forces. If a player ignores or refuses to comply with a rule that your society makes, you must face the issue of how to deal with this behavior. All players have a responsibility to observe the rules in the manual to make the game operative but they have no such responsibility toward the rules that you may establish to govern yourselves.

In spite of efforts to anticipate various contingencies, ambiguous situations will inevitably arise. The coordinator will not interpret such ambiguities but will refer the question to a group in the society for interpretation. He will concern himself only with those aspects of the ambiguous situation that affect his specific tasks as coordinator.

## SUMMARY OF RULES

The rules that follow are detailed but not as complicated as they first appear; you will discover this once SIMSOC is in process. A short
summary of the rules is included here to give you a general sense of the nature of the society and the options available to you. It also includes page references so that you can easily look up exact details as it becomes necessary later. A careful reading of this summary is a helpful way to begin but you should read the complete rules rapidly. Once you begin to play and attempt to achieve your goals, you will need to read carefully various specific sections of the complete rules.

Simbucks.
Simbucks are the basic currency in SIMSOC. Initially, they are held in a bank run by the game coordinator (see p. ). Region.

A11 members of the society live in one of four regions (see p. ): Moving.

A player may move to another region by paying a moving fee to the bank (see p. ).

Travel.
A person cannot travel between regions unless he has either a travel ticket or a Private Transportation Certificate. Travel tickets may be obtained from a limited number of players who have travel agencies and receive a supply of travel tickets each session. A Private Transportation Certificate may be purchased from the bank (see p.). Subsistence.

Every member of the society must, for every session at which he is present, provide for his subsistence. He can do this by means of either a subsistence ticket or a Luxury Living Option. Subsistence tickets can be obtained from a limited number of players who have subsistence agencies and receive a supply of subsistence tickets each
session. A Luxury Living Option may be purchased from the bank and includes a supply of Munchie Tickets in addition to subsistence.

If a person fails to provide subsistence for a session, he loses his job and other privileges. If he fails to provide subsistence in two consecutive sessions, he is considered dead and cannot participate in the society in any way (see p. ).

Munchies.
A limited number of Munchie Tickets will be available for each session. The Coordinator will maintain a Munchie Bazaar at which Munchie Tickets can be converted to food or beverages (see p. ). Basic groups.

There are seven basic groups in SIMSOC for which you can work. Only the head of these groups will be designated by the coordinator at the beginning. The rest of the players must find jobs. The head of each group receives the group's income to dispense.

The groups include two industries (BASIN and RETSIN), two political parties (POP and SOP), an employee interest group (EMPIN), a mass media group (MASMED), and a rule-interpreting group (JUDCO). You should read the description of these groups before beginning play because you will be asked to designate a preference, and, if you are not picked as head of a group, you will be faced with the need for employment (see pp. ). You will also have an opportunity to support or withhold support from some of these groups.

## Absenteeism.

Certain National Indicators (described below) are lowered when members are absent, regardless of the reason (see p. ). Unemployment.

Certain National Indicators are lowered if there are members of the society without jobs (see p. ).

Death.
Certain National Indicators are lowered if members die (see p. ). Minority Group (optional).

The coordinator will announce whether this option is in effect. It provides for the designation of some members of the society as Minority Group Members. These people may be removed from their positions by action of any two non-Minority Group Members at any time (see p. ). Individual Goals.

You will be asked to select certain personal or individual goals to pursue during the course of the society. You will have an opportunity to change these goals and to declare at each session the extent to which you feel you are meeting them (see p. ). SIMFORCE.

Actual physical force is prohibited in SIMSOC but the equivalent of such physical force is provided. Any individual or group may create a SIMFORCE with the power to arrest others and protect specified others from arrest. A person who is arrested is restricted to his region and may not travel, may not hold any job or official position in the society, may not engage in any official transactions with the coordinator, and will have all possessions confiscated. All confiscated materials will be turned over to the head of the SIMFORCE. A person is dead if his. arrest is renewed for two consecutive sessions.

More than one SIMFORCE can be created, and it is also possible to remove an existing SIMFORCE. Arrests lower certain of the National Indicators (see pp. ). Simriot

Members of the society may riot by signing a riot form. Riots may be prevented, however, by the placing of a guard post. Riots lower certain National Indicators.

## National Indicators.

Numerical values for four National Indicators are calculated at the end of each session. The indicators are Food and Energy Supply, Standard of Living, Social Cohesion, and Public Commitment. These National Indicators may be raised by investing Simbucks in either of two broad public programs -- Research and Conservation of Welfare Services. The National Indicators decline by a certain percentage each session and can be lowered further by various actions and events in the society. If the National Indicators decline below certain points, the income available to the basic groups in the society declines. If the National Indicators rise above a certain point, the income available to the basic groups in the society increases. If any National Indicator goes below zero, the society collapses and the game is over (see pp. ).

Government.
There is no requirement that the society establish a government nor any formal rules regulating a government (see p. ). Special events (optional).

The coordinator may announce the occurrence of certain outside events affecting the society but you will not know in advance when the events will occur or what their nature will be (see p. ). The object of the game.

To achieve the individual goals you have set for yourself, to help the basic group to which you belong to achieve its goals, and to see to it that the society as a whole is a "success" -- however you may wish to define this. If you try to achieve these objectives, the larger objective of learning will be achieved (see p. ). General constraints.

The laws of nature prohibit all of the following:

1. Taking resources from the bank or from other participants without their consent;
2. The use of physical force. (The game provides for a simulated version of this.)
3. Counterfeiting Simbucks or other resources.
4. Forging another person's signature without their consent.

## SIMBUCKS

Simbucks are the basic currency in SIMSOC. They are signified in these instructions by $\$$. You can use them to buy things you will need to achieve your goals in the society. For example, they will help you to travel or buy subsistence and munchies. You can also invest them in various ways or you may save them up in any given session for later use. As you read the following instructions, you will discover the many ways in which you can spend your Simbucks. A11 Simbucks not owned by an individual or groups in the society are the property of the bank kept by the coordinator. The bank does not make loans or extend credit.

## PRIVATE LIFE

## REGION

A11 members of the society live in one of four regions, designated Red, Yellow, Blue, and Green. At the beginning of each session, you must go to your home region.

Moving
Any player may move to another region by filing the Moving Sheet (Form C) and paying a moving fee of $\$ 10$ to the bank. The move becomes effective at the beginning of the session following the filing of this form. In other words, if the player wishes, to go to his new region
immediately, he must provide his transportation as described below. Moving to a new region is subject to the following restrictions. First, no more than one-third of the total participants (including absentees) may live in any one region. Second, a player may be refused admission to a region by the unanimous consent of the inhabitants who are present (that is, excluding visitors or absentees).

## TRAVEL

You may travel between regions in two ways:

1) Public transportation. A person who possesses a travel ticket may use it to travel between regions. A travel ticket is good for one trip where a trip is defined as leaving and returning to the home region with no more than one stop in each other region. A trip is over when the traveler returns to his home region or repeats a visit to any region. It is your responsibility to give the coordinator or an assistant your travel ticket at the beginning of each trip. Travel tickets can be obtained from people who possess travel agencies (see discussion below).
2) Private transportation. Any individual may purchase a Private Transportation Certificate from the bank at a cost of $\$ 25$ (Form D). Those who possess such a certificate may make as many trips as they like. In other words, a Private Transportation Certificate allows you to travel freely for the rest of the session and for all future sessions of the society. Only the individual who bought a Private Transportation Certificate may use it. He may, however, transfer his certificate to another individual but to do so he must file Form•F and pay a transfer fee of $\$ 3$ to the bank. The bank cannot buy back a Private Transportation Certificate once it has been issued.

No one may travel unless he has either a travel ticket or a Private Transportation Certificate. A certain number of players will be designated
as owners of travel agencies at the beginning of the game. These agency heads will receive five travel tickets in each session which they can use, hoard, dispense, save, or sell in any fashion they see fit. Unused travel tickets may be carried over to future sessions. A travel agency with its annual supply of five travel tickets may be sold or transferred (Form F) but a transfer charge of $\$ 3$ must be paid to the bank.

## Restrictions on Travel

Travel is subject to the following restrictions: First, no more than half of the total participants present at a session may occupy any region at any one time. A traveling member may not enter a region in which there are already $50 \%$ of the members of the society present. This restriction also applies to any other areas even if they are not official regions (for example, an "uninhabited region" used as a meeting place). Second, any player, even with valid transportation, may be refused admission to a region by the unanimous consent of the inhabitants who are present (excluding visitors or absentees). He may not be refused admission if one or more of the inhabitants is willing to have the traveler enter.

Calling or shouting between regions is prohibited. You should act as if sound barriers make it impossible to speak to someone unless one is physically present in the same region.

## Reassigning an Agency

If the owner of a travel agency is absent, arrested, or has a Minority Group Action (Form K) filed against him, he loses his agency. The coordinator will reassign the agency at random to another member of the same home region. If the old owner has not yet received the allotment of tickets for the current session, the new owner will receive the supply for that session.

## Location of Bank

The coordinator's desk or bank is considered part of every region and transactions with the coordinator do not require travel.

## Subsistence

Every member of the society must, for every session at which he is present (even if present for only part of the session), provide for his subsistence. He can do this by presenting the coordinator with a subsistence ticket at any time before the end of the session. He can also provide for subsistence plus luxury by purchasing one of the luxury living options described below.

A certain number of players will be designated as owners of subsistence agencies at the beginning of the game. These agency heads will receive five subsistence tickets in each session, which they can use, hoard, dispense, save, or sell in any fashion they see fit. Unused subsistence tickets may be carried over to future sessions. A subsistence agency, with its annual supply of five tickets, may be sold or transferred (Form F) but a transfer charge of $\$ 3$ must be paid to the bank.
. . Luxurý:Living Package. . An individual may provide for his subsistence by purchasing a Luxury Living Package from the coordinator at a price of \$15 per session. A Luxury Living Package includes subsistence for the purchaser for the session in which it is purchased plus five Munchie Tickets.

Endowment. Any individual may purchase from the coordinator a Luxury Living Endowment at a cost of $\$ 25$ (Form E). This endowment provides the individual with subsistence for the session in which it is purchased and for all future sessions, plus a supply of five Munchie Tickets for each session. A person may transfer his Luxury Living Endowment to another participant (Form F) but a transfer charge of $\$ 3$ must be paid to the bank. The bank cannot buy back a Luxury Living Package or Endowment once it has been issued. A Luxury Living Endowment can be used to provide subsistence and Munchie Tickets for only one individual per session.

## Reassigning an Agency

The same rules apply as for a Travel Agency.

## Subsistance Failure

If a person fails to provide subsistence for a session, he suffers the following consequences:

1) As of the end of that session, he is unemployed; if he is head of a basic group, he will be removed from his position and a new head will be chosen in the manner specified in the rules. If he owns a subsistence or travel agency, he forfeits it and it will be reassigned as specified in the rules.
2) As of the end of the session, he cannot engage in any official transaction with the coordinator (that is, he cannot turn in any forms) except for those relating to subsistence.

These restrictions remain in effect until he provides a subsistence ticket or buys luxury living. During the period in which he is without subsistence, he is free to talk to others and to travel if he has the means of transportation. Even though he is officially unemployed, he may participate in activities unofficially and may continue to hold any Simbucks or tickets which he has saved from previous sessions. Once he obtains subsistence, it is up to him to find a new job or regain his old one; he does not automatically assume his old position.

## Repeated Subsistence Failure

If a subsistence failure occurs in two consecutive sessions, the member is considered dead and henceforth cannot participate in the society in any way. He will then be asked by the coordinator to observe the society and assist the coordinator.

## Munchies

Munchies represent imported luxuries. A limited number of Munchie Tickets will be available for each session. The total number available per session is based on one of the National Indicators -- Standard of Living. The exact relationship depends on the size of the society as follows:

Size Level One $=.7 \times$ Standard of Living
Size Level Two $=1.0 \times$ Standard of Living
Size Level Three $=1.3 \times$ Standard of Living Since the Standard of Living begins at 100 , in the first session there will be 70,100 , or 130 Munchie Tickets available depending on the Size Level.

When the game begins, some members of the society will have Munchie Tickets. The balance of Munchie Tickets that are not distributed can be purchased from the coordinator at a cost of $\$ 1$ each on a first come first served basis.

During the course of the society, some members may purchase Luxury Living Endowments which call for them to be supplied with Munchie Tickets. Those who have such endowments will receive first call on the available supply of Munchie Tickets for a session. If the supply available is insufficient to cover what they have coming, the amount available will be divided as evenly as possible among those with such Endowments. If the supply available is more than sufficient to cover the Endowments, the balance will be available for purcaflse from the coordinator at \$1 each. Any Munchie Tickets not sold by the coordinator during a given session will revert to the bank with a fresh allotment available for the next session.

The coordinator will maintain a Munchie Bazaar at which Munchie Tickets can be converted to food or beverages at rates designated by the coordinator. Munchie Tickets need not be used in the session acquired and may be dispensed, saved, or sold in any fashion the owner sees fit.

The bringing of any food or beverage to sessions of SIMSOC is prohibited. Participants should act as if the Munchie Bazaar is the only place where it is possible to get Munchies while the society is in session.

## BASIC GROUPS

There are seven basic groups consisting of two industries (BASIN and RETSIN), two political parties (POP and SOP), and employee organization (EMPIN), a mass media group (MASMED) and a judicial council (JUDCO). The objectives of these groups and the resources and options available to them are described in detail below.

Before the society begins, you will be asked to express first, second, and third preferences among the types of groups described below. These choices will be used only in selecting the head of each group, not the other group members.

Those persons not assigned as head of a group may then seek employment in one or more of the groups. In seeking employment:

1) You do not have to join the group you originally chose on Form A, but can join any group that will hire you.
2) You can work for more than one group. This also applies to the heads, who may hold positions in other groups.
3) Ownership of a subsistence or travel agency is considered employment but you may accept positions in basic groups as well.

Three different figures are given below for the basic income of some groups: Size Level One, Size Level Two, and Size Level Three. The appropriate figure is determined by the total number of participants in your society. It will be announced by the coordinator prior to beginning the game and will not change. You may find it helpful to cross out the figures that to not apply to your society.

## Basic Industry

Overall objective.
To expand its assets and income as much as possible.
BASIN represent ${ }_{\wedge}^{S}$ a basic extractive industry such as mining. Its raw material is words from which it extracts the vowels $a$, $\underline{e}$, i, ㅇ, and $\underline{u}$. In each session, BASIN may purchase from the coordinator any number up to five verbal passages. These passages need not all be purchased at the same time and may be purchased anytime during the session. A completed passage consists of a list of the correct number for each type of vowel that appears in the passage.

A11 purchases of passages must be authorized by the head of BASIN, using Form H. The passages purchased will vary in length and hence in the labor involved in determining the correct number of vowels. The exact cost of a passage and the payment for a completed passage varies depending on the size level of the society and is summarized in Table 1. This Table shows that BASIN receives a $25 \%$ profit on its investment for extracting the vowels correctly.

The return which BASIN receives for a completed passage is reduced if there are errors in the solution. Each number that BASIN is off from the correct solution counts as an error. Thus, if a solution has the correct number of $\underline{a}^{\prime} s, e^{\prime} s$, and $\underline{i}^{\prime} s$, but has two less o's than the correct answer and one more $\underline{u}$ than the correct answer, this constitutes three errors. Each error reduces the payment or credit to BASIN for a completed passage by $\frac{5}{2} \%$. For example, in a Size Level Two society, BASIN would pay $\$ 60$ for a passage. If the solution had four errors, instead of receiving the full payment of $\$ 75$ it would receive $\$ 75-20 \% \%(\$ 75)=\$ 45 . \quad$ BASIN
receives zero payment for solutions in which there are nine or more errors.

To receive credit for a passage, the solution must be turned in to the coordinator using Form $H$ during the same session in which the passage was purchased. Passages purchased in one session cannot be held over to be completed in later sessions. Payment or credit for a completed passage is not received until the session is over. In other words, if BASIN completes a passage early in the session, it cannot use the payment for this product immediately, since it does not receive it until the session is over. The coordinator will keep track of BASIN's assets, and the head of BASIN will receive $10 \%$ interest on its assets at the beginning of each new session, including the value of work completed by the end of the previous session. The head of BASIN can withdraw part or all of its assets from the bank at any time by filling out Form $I$ and giving it to the coordinator.

BASIN can purchase passages by using its assets in the bank and its income from these assets. In the beginning of the society, however, BASIN assets and income are not high enough to purchase five passages. Therefore, if BASIN wishes to buy the greatest possible number of passages, it will need to raise Simbucks from other individuals and groups in the society. It may do this by promising others some return on their money, by arguments about how this will.help the society, or by offering other inducements, threats, or persuasive reasons for people to lend their money to BASIN. Effects on National Indicators

The buying of passages and their successful completion by BASIN affects two of the National Indicators (these are described more fully later). The Standard of Living is raised for each
acceptable solution (that is, each solution with a maximum of eight errors). The Food and Energy Supply is lowered for each passage purchased on the assumption that this investment depletes existing resources in the society. In other words, buying passages entails short-term costs for the society but at the same time produces long-term growth in the economy.

Table 1. Summary of BASIN Assets, Income, Investment Costs, and Returns

| Starting | Income in | Cost | Payment for |
| :---: | :---: | :---: | :---: |
| Assets in | First | per | Completed |
| Bank | Session | Passage | Passage* |


| Size Level One | $\$ 120$ | $\$ 12$ | $\$ 40$ | $\$ 50$ |
| :--- | :--- | :--- | :--- | ---: |
| Size Level Two | 180 | 16 | 18 | 60 |
| Size Level Three | 240 | 24 | 80 | 75 |

*Less 5\% for each error up to eight, zero payment for completed nine

## RETSIN

Retail Sales Industry
Overall objective.
Like BASIN, the objective of RETSIN is to expand its assets and
income as much as possible.
RETSIN represents an industry that manufactures retail goods for sale abroad. The market for its product is less certain than BASIN's market. Its raw material consists of large core words from which it can form smaller marketable words. For each core word, there are only five marketable words, but RETSIN won't know which ones are of value except that all marketable words have at least five letters.

In each session, RETSIN may purchase from the coordinator any number up to five core words. These core words need not be purchased at the same time and may be purchased anytime during the session. A completed core word consists of a list of smaller words including as many marketable words as possible. Once a completed core word has been turned in to the coordinator it cannot be reclaimed for further work in the event that some marketable words have been missed. Most marketable words, however, will be fairly obvious, and shouldn't take more than five to ten minutes to discover.

All purchases of core words must be authorized by the head of RETSIN, using Form $H$. The exact cost of a core word and the payment for each marketable word derived from it varies depending on the size level of the society and is summarized in Table 2. This Table shows that RETSIN receives a fifty percent return on its investment if it produces all five marketable words from a core word, twenty percent if it produces four, negative ten percent if it produces three, nega-
tive forty percent if it produces two, and negative seventy percent if it produces only one marketable word. For example, in a Size Level Two society, RETSIN would pay $\$ 60$ for a core word. If its solution had four marketable words, it would receive $\$ 18$ for each or a total of $\$ 72$.

To receive credit for marketable words, the solution must be turned in to the coordinator using Form $H$ during the same session in which the core word was purchased. Core words purchased in one session cannot be held over to be completed in later sessions. Payment or credit for marketable words is not received until the beginning of the following session. In other words, if RETSIN completes a core word early in a session, it cannot use the payment for this product immediately since it does not receive it until the session is over. The coordinator will keep track of RETSIN's assets at the beginning of each new session. The head of RETSIN can withdraw part or all of its assets from the bank at any time by filling out Form I and giving it to the coordinator.

RETSIN can purchase core words by using its assets in the bank and its income from these assets. In the beginning of the society, however, RETSIN assets and income are not high enough to purchase five core words. Therefore, if RETSIN wishes to buy the greatest possible number of core words, it will need to raise Simbucks from other individuals and groups in the society. It may do this by promising others some return on their money, by arguments about how this will help the society, or by offering other inducements, threats, or persuasive reasons for people to lend their money to RETSIN.

## Effects on National Indicators

The manufacture of marketable words from core words by RETSIN affects two of the National Indicators (as described more fully later). The Standard of Living is raised for each core word that is converted into one or more marketable words. However, Public Commitment is lowered for completed core words on the assumption that RETSIN's product, while in demand abroad, is not regarded as fully reputable by the citizens of SIMSOC -- for example, armaments, heroin, useless or shoddy objects, or something otherwise objectionable. Hence, the production of marketable words causes some discontent, reflected in the effect on Public Commitment. In other words, buying core words entails short-term costs for the society but at the same time produces long-term growth in the economy.

Table 2. Summary of RETSIN Assets, Income. Investment Costs, and Returns.

|  | $\qquad$ | Income in First Session | $\begin{gathered} \text { Cost } \\ \text { per } \\ \text { Core Word } \end{gathered}$ | Payment <br> for each <br> Marketable <br> Word | . .Maximum <br> Payment for Completed Core Word |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Size Level One | \$120 | \$12 | \$40 | \$12 | \$60 |
| Size Level Two | 180180 | 46.18 | 60 | 18 | 90 |
| Size Level Three | 200240 | 2024 | 80 | 24 | 120 |

## Party of the People

## Overall Objective

To determine the major public policies followed by the society and to develop programs and mobilize supporters for this purpose. To be more influential than its rival.

When the society begins, POP is a political party that has neither a program, philosophy, or ideology. It is up to the members of POP to develop these things as they see fit. The content may vary greatly depending on the circumstances in a given society and the beliefs of the citizens.

Income for POP
At the beginning of the first session, POP receives a basic income as follows:

Size Level One: $\quad \$ 40$
Size Level Two: $\quad \$ 60$
Size Level Three: $\$ 80$
After the first session, POP receives an income equal to the following:
$\frac{\text { Number of Support Cards Turned in During Session }}{40 \% \text { of members of the society }} \times$ Basic Income.
To illustrate, in a Size Level Two society, POP would receive $\$ 60$ for the first session. If POP received the support cards of $50 \%$ of the members in the first session, it would receive an income of $\$ 72$ at the beginning of the next session ( $50 \% / 40 \%=1.2 \times \$ 60=\$ 72$ ). Turning in Support Cards

Each individual in the society may turn in one Party Support card per session for either POP or SOP, but he is not obliged to
turn in a Party Support card if he chooses not to.
Support cards may be turned in at any time during a session either by an individual directly or through an intermediary. To be valid, a support card must be signed by the individual expressing support. If the coordinator receives more than one support card signed by the same individual for a given session, all of that individual's support cards will be considered invalid for that session and the person will be treated as having abstained. Support cards from absentees or people under arrest are invalid and will not be counted.

The political parties may work together if they choose, and new parties may be created, but these actions do not affect the rules for receiving income which the coordinator follows. Members of the society are free to handle the distribution of this income once it is received in any manner consistent with the rules.

Overall Objective:
Same as instructions for POP.
Basic income for first session:
Size Level One: $\quad \$ 40$
Size Level Two: $\quad \$ 60$
Size Level Three: \$80
After the first session, same rules as for POP.

To see to it that the members of SIMSOC who are not heads of basic groups have adequate subsistence and a fair share of the wealth of the society.

EMPIN may wish to organize the members of society who work for the various basic groups in some manner. They may wish to develop various services for this constituency. They may wish to propose programs for the society as a whole that would meet their objectives. They may want to work closely with one or more other groups. They may want to carry out various educational programs.

## Income

EMPIN's income depends on its membership. It has no income for the first session. In each subsequent session, it receives an amount of Simbucks equal to twice the number of valid EMPIN cards turned in to the Coordinator. For example, if 25 members turn in valid EMPIN membership cards during a given session, EMPIN will receive an income of $\$ 50$ for the next session. EMPIN may solicit additional money from members of the society if it wishes. Turning in EMPIN Membership Cards

As with the party support card, each individual may turn in one EMPIN membership card per session or, if he chooses, he may decline to turn in a card. EMPIN membership cards may be turned in at any time during a session either by an individual directly or through an intermediary. To be valid, an EMPIN membership card must be signed by the individual member. If the coordinator receives more than one

EMPIN membership card for the same individual during a session, it will count as only one membership. Membership cards from absentees and persons under arrest are invalid and will not be counted.

Note: EMPIN membership cards will only be considered valid if the signer is employed at the end of the session. Cards from unemployed members will not be counted in calculating EMPIN's income.

## MASMED

## Mass Media

Overa11 Objective
To insure good communication across regions about what is happening in the society.

MASMED does not have a monopoly over communication in SIMSOC but it has certain advantages and information that make it easier for it to play a special role. The most commonly used form of communication in SIMSOC is face-to-face oral communication as participants travel from one region to another. To facilitate the role of MASMED in such communication, the head of MASMED receives a Private Transportation Certificate and a one-time supply of five travel tickets. This is initially issued in the name of the head of MASMED but it can be transferred by the usual procedures described above under Trave1 (p. ).

MASMED also has an advantage with respect to two other media, the precise nature of which will be specified by the Coordinator:

1) National Broadcasting System. If an intercom system makes i.t possible to speak directly to all regions simultaneously, this will serve as a broadcast medium. The head of MASMED can authorize or deliver up to two broadcasts per session without charge. A broadcast
may be of any length as long as it is continuous in time. Any member of the society may use this medium at a cost of $\$ 10$ per broadcast, payable to the coordinator. This applies to the head of MASMED also once the two free broadcasts have been used.

If there is no intercom system, this same service will be provided by the Coordinator or an assistant who will travel from region to region to transmit the broadcast.
2) News Magazine (where faciflities are available). This can be used for long-term developments and trends, editorials, analyses, and records. It may be prepared during sessions or between sessions for distribution at the beginning of the following session. The head of MASMED can authorize the Coordinator to distribute two pages of copy per session without charge. Any member of the society may use this medium at a cost of $\$ 10$ per page of copy, payable to the Coordinator. This applies to the head of MASMED also once the two free pages of copy have been distributed.

After each session is completed and the Coordinator has had an opportunity to calculate changes in the National Indicators, he will inform the head of MASMED of the current value of these indicators: rates of absenteeism, unemployment, arrests, and death; and the total of number POP and SOP cards, EMPIN memberships, MASMED subscriptions; and individual goal declarations turned in during the previous session. This information can be used by the head of MASMED in any way desired. However, all official forms filed by any individual with the Coordinator will be treated as confidential and will be revealed only with the permission of the person filing the form.

Income
At the beginning of the first session, MASMED receives no income. After the first session, MASMED receives income equal to twice the number of valid MASMED subscriptions turned in to the Coordinator. For example, if 25 members turn in valid MASMED subscriptions during a given session, MASMED will receive an income of $\$ 50$ for the next session. MASMED may solicit additional money from members of the society or may charge for its services if it wishes. Turning in MASMED Subscriptions

As with Party Support cards and EMPIN membership cards, each individual may turn in one MASMED subscription per session or may choose not to subscribe. MASMED subscriptions may be turned in at any time during a session either by an individual directly or through an intermediary. To be valid, a MASMED subscription must be signed by the individual subscriber. If the Coordinator receives more than one MASMED subscription for the same individual during a session, it will be counted as only one subscription. Subscriptions from absentees or persons under arrest are invalid and will not be counted. Summary of MASMED Resources

1 Permanent Transportation Certificate.

5 Travel Tickets (Opening Session Only).
Special access to information on National Indicators, other rates, support cards turned in for Basic Groups, and totals on individual goal declarations.

Two free broadcasts per session.
Two free pages of copy distributed per session.

Income based on number of subscriptions after first session.

## Judicial Council

Overall Objective
To clarify and interpret the rules as honestly and conscien-

## tiously as they can.

JUDCO members may be called on to decide issues such as the following: (a) whether the action or prospective action of some member or group of members violates the basic rules of the game, or (b) whether an agreement among members of the society violates any basic rule of the game. JUDCO may act when some action or agreement is challenged. JUDCO is the final arbiter on the meaning and interpretation of all rules, and the coordinator may refer questions to JUDCO for clarification.

JUDCO members should try to interpret ambiguous situations in good faith rather than using their ingenuity to ignore the basic rules. The coordinator will accept JUDCO's judgment even though it might differ from his own interpretation, but arbitrary and capricious interpretations can render SIMSOC meaningless. If JUDCO, by its interpretations, removes the "natural constraints" which the rules are intended to simulate, the dilemmas which the game poses will disappear -- and the challenge of the game and its value as a learning device will disappear at the same time.
1): To be valid, JUDCO decisions must be signed by a simple majority of its members. These decisions must be filed on Form $J$ and signed by a majority.
2) JUDCO must have at least two other members besides its head, but it may have more than this as long as the total membership is
an odd number.
Basic Income per Session
Size Level One: $\$ 60$
Size Level Two: $\quad \$ 90$
Size Level Three: $\$ 120$

## The Group Head

Powers of the Head of a Group
No one is considered officially employed by a group until the head of the group has filed a Job Schedule (Form G) listing him. If the group head wishes to make changes he must file another copy indicating the nature of the changes. Employment is assumed to carry over between sessions unless something happens to change a person's employment status. It is not necessary for the group head $t$
$\lambda$
file a Job Schedule after the first session unless he wishes to make some change in employment.

No individual will be considered employed without his own consent; an individual may quit any job by filling out the notice of resignation on the Job Schedule. Agreements on salary and working conditions are internal matters between the head and his employees and need not be reported to the coordinator.

Removing the Head of a Group
Voluntary Refmoval
The head of a group may resign at any time and simply appoint a successor of his choice. He does this by filling out the appropriate part of the Job Schedule (Form G).

## :. Involuntary Removal

The head of a group is automatically removed from office if (a) he fails to provide subsistence, (b) is arrested, or (c) is absent. He may also be removed from office by the unanimous consent of all employees of the group who are present at that session. There is one qualification to this rule: the head cannot be removed by unanimous consent unless there are at least two official employees present.

Replacing the Head of a Group
In the case of voluntary removal, the old head can simply designate a successor. In the case of involuntary removal, we must distinguish three cases:

1) There are no other employees or all are absent. In this case, the coordinator will pick a new head at random from the same region in which the old head resides.
2) There is only one other employee present at the session. This employee automatically becomes the new head.
3) There are two or more employees present. They must agree unanimously on a new head. In the event that they cannot come to a unanimous agreement, the group will remain without a head for that session. At the end of the session, the coordinator will pick a new head for the following session at random from among the employees.

The Job Schedule (Form G) is the form to use for all transac tions regarding the removal and replacement of the head of a group.

## Mergers

Groups may make various*alliances and arrangements with each other including mergers, federations, and the like. All such agreements: are internal matters among members of the society and do not involve coordinator transactions. For example, if two group heads join together to create a new group, the coordinator will continue to provide any resources that individuals are entitled to under the rules. The individuals are then free to pool these resources or not as they choose.

## Absenteeism

For every member of the society absent from any session, regardless of reason, Standard of Living and Public Commitment are each reduced by two units. Absentees are not required to supply subsistence for sessions which they miss. Hence, they do not suffer the consequences of subsistence failure for the following session.

If the head of a basic group or agency is absent he is autobe matically removed from office, and a new head will designated in the manner provided in the rules. Employees of the group other than the head continue to hold their position while absent unless they are removed by the head. A member is not considered absent if he is present for any part of a session.

For any session in which there are five or more absentees (but less than ten), one subsistence agency chosen at random will not receive its allotment of subsistence tickets. For any session in which there are ten or more absentees, two subsistence agencies chosen at random will not receive their allotment of subsistence tickets.

## Unemployment

Unemployment can result from any of five causes:

1) Employer action. You may be fired or no one may be willing to hire you;
2) Employee action. You may resign from all of your positions;
3) Subsistence failure. Failure to obtain subsistence means automatic unemployment;
4) Arrest. Arrest means automatic unemployment (see discussion of SIMFORCE below);
5) Minority Group Action. If the Minority Group option is in effect, some persons may become unemployed by having a Minority Group Action (Form K) filed against them (see discussion of Minority Group below).

For each unemployed person during a given session, Standard of Living and Social Cohesion will each be lowered by three units, and Public Commitment will be lowered by one unit. (This does not include unemployment due to arrest, the effects of which are already included.)

## Death

A member may die from failing to obtain subsistence in two consecutive sessions or from having his arrest renewed for two consecutive sessions (that is, having had his arrest renewed once, the next renewal is equivalent to execution). A member who dies henceforth cannot participate in the society in any way; he will be asked to observe and assist the coordinator. Each death, regardless of cause, lowers Standard of Living, Social Cohesion, and Public Commitment by five units.

## Minority Group (Optional)

The coordinator may include the following optional feature. Of the members of the society $20 \%$ will be designated by the instructor as Minority Group Members when the society begins. They will be asked to wear some clear insignia or armband so that everyone can clearly identify them as a Minority Group Member.

Minority Group Members will operate under the following special restrictions: Any two non-Minority Group Members of the society may at any time, and without cost, have any Minority Group Member fired from his job and removed as head of a basic group and owner of a subsistence or travel agency This is done by filing Form $K$ with the instructor.

If a Minority Group Member is a head of a basic group or agency, a new head will be designated in the manner indicated in the rules.

The Minority Group Member who is the recipient of such action retains all resources in his possession including Simbucks and travel, subsistence, or munchie tickets. He also retains his private transportation certificate and luxury living endowment if he owns one. If he controls a Simforce, this is not affected by Form K. In sum, a Form $K$ only deprives a Minority Group Member of his posi $\div$ tions but not of his possessions.

A Minority Group Member may reacquire any former positions in the next session if he is able to do so. He may not hold any position with a basic group or hold any agency during the remainder of the session in which the Form $K$ has been filed against him. Furthermore, a new Form $K$ may be filed against him in subsequent sessions.

## Individual Goals

In addition to pursuing various goals for the society as a whole and basic group goals, individuals are asked to pursue personal or individual goals. An individual goal emphasizes something for you qua individual (for example, being powerful) rather than a goal for the society (for example, making SIMSOC a place where people trust each other).

A short list of possible pers̈onal goals in SIMSOC is given below. You should choose one or more which you intend to pursue. In addition to or in place of those listed, you may substitute other individual goals which you might wish to pursue but be sure that they refer to something for you as an individual.

You will have an opportunity to change the goals you choose at the beginning during the course of the game.

1) Power. I will try to influence what happens in the society as much as possible.
2) Center of attention. I will try to be a central figure in the life of the society, salient to as many people as possible.
3) Style of life. I will try to enjoy the highest standard of living available, including as many munchies as possible.
4) Security. I will try to lead a life in which $I$ will not be threatened by lack of subsistence, by loss of job, arrest, or any other misfortune.
5) Popularity. I will try to be loved and admired as much as possible.
6) Fun and Adventure. I will try to lead an exciting life, filled with adventure and challenge.
7) Other. (Please specify.)

## Individual Goal Declaration

Each individual may turn in one Goal Declaration Card per session, choosing one of the following three answers to the question: "Are you satisfied with how well you are meeting your personal goals?"
a) Yes, I'm satisfied.
b) No, I'm not satisfied.
c) I've changed my individual goals as follows: (specifies the nature of the change).

Note that you have the option of not turning in any Individual Goal Declaration either because you are uncertain or for whatever other reason. Individual Goal Declarations may be turned in at any time during a session. Unlike Party Support Cards, EMPIN Memberships or MASMED subscriptions, Individual Goal Declarations may not be turned in by an intermediary but must be given by the individual directly to the coordinator. No more than one option may be checked, nor more than one turned in per session, or all will be considered invalid for that session. Individual Goal Declarations from absentees or from people under arrest are invalid and will not be counted. Effects of Individual Goal Declarations on National Indicators

One of the National Indicators, Public Commitment, is raised by one unit for each person turning in a positive goal declaration and is lowered by one unit for each person turning in a negative declaration or changing his goal. Abstentions do not affect Public Commitment.

At this point, take out your Choice Sheet (Form A) and indicate on it your choice of basic group and individual goal(s). Put only your name on the Assignment Sheet (Form B) and pass this in also.

This will be filled out by the coordinator and returned to you at the beginning of the first session.

## SIMFORCE

For better or worse, physical force or the threat of physical force plays a role in the life of real societies. It may take various forms -- police arresting citizens, secret terrorist organizations threatening citizens, guerrilla forces attacking government officials, or even two armies fighting against each other as in a civil war. Actual physical force is prohibited in SIMSOC -- no participant can physically restrain the movement of another participant or in any other way use physical force against him. The equivalent of such physical force is, however, provided in the game. Initiating a SIMFORCE

Any individual or group of individuals may create a SIMFORCE by filling out Form $L$; the minimum cost is $\$ 25$ (paid to the bank) but a larger amount of money will create a larger SIMFORCE. Form L requires an authorization rule that tells the coordinator what constitutes an order of the SIMFORCE. This statement may take any form desired (for example, "an order must be signed by two-thirds majority," "an order must be signed by any one of the following people," or "an order must be signed by all of the following people"). The only requirement is that the statement be unambiguous.

A SIMFORCE must be renewed during the second session following its creation or it will be considered defunct, and its orders made during that session and subsequent sessions will not be carried out. The renewal cost is $\$ 10$ (paid to the bank) for a force of any size;
this payment is for maintenance and does not increase its size. The SIMFORCE must also designate a head, but the powers of this head are regulated by the authorization rule that is chosen. The head of the SIMFORCE receives the confiscated possessions of those arrested (as described below) and is the communication link with the coordinator. The size of a SIMFORCE may be increased by giving additional money to the bank for this purpose.

A SIMFORCE has three powers: (1) to arrest persons, (2) to protect persons from arrest, and (3) to attack another SIMFORCE.

## Arrest

An arrest is initiated by filling out Form L. (One must, of course, already have a SIMFORCE to arrest someone.) There is a cost of $\$ 10$ (paid to the bank) for each person placed under arrest. The actual arrest is made by the coordinator, who will carry out the orders of the SIMFORCE. If the coordinator cannot carry out an ordered arrest because the target is under the protection of a SIMFORCE, the head of the SIMFORCE attempting the arrest will be informed that the order cannot be carried out, but the $\$ 10$ will not be returned.

Arrests of unprotected persons will take place as soon as the coordinator is able to carry out the order and will last for the duration of the session. The arrested citizen will be informed by the coordinator of his status and all of his possessions will be confiscated (see discussion below). The coordinator will not announce the identity of the arresting SIMFORCE unless asked to do so by the head of the SIMFORCE. All confiscated possessions will be turned over to the head of the SIMFORCE.

An arrested person may be released at any time by order of the arresting SIMFORCE. The return of confiscated materials when a person
is released is an internal matter and is not specified by the rules. At the beginning of each session following an arrest, the coordinator will ask the SIMFORCE head whether he wishes to renew existing arrests for the session or to release those under arrest. Renewals require a payment to the bank of $\$ 10$ for each arrested person for a session. The coordinator will inform those under arrest of their status for the session.

All arrested individuals are automatically released immediately if the arresting SIMFORCE is removed (see discussion below on removing a SIMFORCE).

Restrictions on the Arrested Person
A member who is under arrest:
(a) is restricted to his own region and may not travel,
(b) may not hold any official position in the society (including any position in a basic group or agency),
(c) may not engage in any official transactions with the coordinator (i.e., turn in any forms, invest Simbucks, etc.), and
(d) will have confiscated all Simbucks, subsistence, travel, and munchie tickets in his possession at the time of arrest.

POP and SOP support cards, EMPIN membership cards, MASMED Subscriptions and Individual Goal Declarations from individuals under arrest are invalid and will not be counted by the Coordinator.

An arrested person maintains his Luxury Living Endowment and Private Transportation Certificate if he owns one but cannot use them or their entitlements while under arrest. It is assumed that an arrested individual is provided with subsistence while under arrest, but if he is released during a session he must provide subsistence for that session.

An individual whose arrest is renewed for two consecutive sessions is dead and, henceforth, cannot participate in any way. He will be asked to observe and assist the coordinator.

## Protection from Arrest

Any person who is under the protection of a SIMFORCE cannot be arrested until the protecting SIMFORCE is removed. All individuals authorized to sign orders of the SIMFORCE (as indicated on Form L) are automatically assumed to be protected by it; in addition, the SIMFORCE may place any other individuals under its protection by so indicating on Form L. In order to be effective, protection must be extended to a person prior to the time that the coordinator informs him of his arrest.

Changing the Authorization Rule

Any person or persons who are authorized to give orders may issue orders changing the authorization rule itself (see Form L). Fines

A SIMFORCE may wish to institute a schedule of fines for given actions. The coordinator, however, will not act as the agent of the SIMFORCE in collecting such fines. If a fine is assessed against someone and he refuses to pay, the refusal may be ignored or some action such as arrest may be carried out against the refuser. In short, the collection of fines is the responsibility of the participants and will not be assumed by the coordinator. Removing a SIMFORCE

A SIMFORCE may be destroyed by an attack from another, larger SIMFORCE. An attack is launched by filing an attack order on the SIMFORCE action form (Form L). An attack is successful in removing
the target if and only if:
a) the target is correctly identified by the name of the official head, and
b) the attacking SIMFORCE is at least $\$ 25$ larger than the target force.

If an attack is successful, the coordinator will inform the attacker of this fact and will inform the head of the now defunct SIMFORCE that his force is no longer in effect. In the case of a successful attack, the attacking SIMFORCE will be reduced in overall size by an amount equal to fifty percent of the size of the SIMFORCE that was destroyed.

The coordinator will not reveal the size of any SIMFORCE or the name of the official head. If an attack is unsuccessful because of a failure to identify the head accurately, the head of the attacking SIMFORCE will be charged $\$ 10$ and will be informed of the failure of identification. If an attack is unsuccessful because the attacking SIMFORCE is insufficient in size to overcome the target, the attacking SIMFORCE will be reduced in size by fifty percent and the head will be so informed. The head of the SIMFORCE that was attacked will be informed of the unsuccessful attack on his force but will not be told the identity of the attacking SIMFORCE.

To illustrate this rule, assume that a SIMFORCE of size $\$ 70$ attacks another SIMFORCE of size $\$ 50$ and correctly identifies the head. The attack is unsuccessful since the attacking force is not $\$ 25$
larger than the target. The unsuccessful attack means that it is reduced in size by fifty percent to $\$ 35$.

Once an attack order is filed with the coordinator, the attack
is considered in process. Neither the attacking SIMFORCE nor the target SIMFORCE may be enlarged in size while an attack is in process and before the coordinator has had an opportunity to complete the attack order.

## Effects on National Indicators

There is no expectation that a SIMFORCE will necessarily be created. It is only a possible option, and the society may end up with none, one, or several forces depending on the decisions of its members.

Arrests affect the National Indicators in the following fashion:
For every individual who is arrested, Public Commitment and Social Cohesion are reduced by three units.

## Simriot

Members of the society may riot by signing the Riot Form (Form M). An individual may sign a maximum of one riot form in any given session. If more than one is signed, signatures on all such forms will be considered invalid. A riot does not occur until and unless the riot form is presented to the coordinator; thus, the existence of a signed riot form does not guarantee that a riot will in fact occur. Signatures on riot forms are valid only for the session in which they are signed. Individuals under arrest cannot riot.

Preventing a Riot
Any individual may, by payment of a fee of $\$ 20$, place a guard post in any designated region. The posting of a guard will be indicated by the Coordinator's placing of a guard post. (Form N) in a visible place in the designated region. The guard post is valid only for the session in which it is posted, but the original poster has the option of renewing it at the beginning of each session for
a fee of $\$ 20$ per session. The presence of a guard post in a region makes it impossible for a riot to occur in that region. Hence, signatures on a Riot Form will be considered invalid if a Guard Post is in effect in their region at the time a Riot Form for that region is filed with the Coordinator. Effects of a Riot on National Indicators

Public Commitment: -2 for each rioter.
Social Cohesion: Calculate the percentage of the total population of the society represented by the rioters to the nearest five percent and apply Table 3 below:

Table 3: Effects of Riot Percentage on Social Cohesion.
Percentage Social Cohesion

5

10
15
20
25
30 or more

0
-6
$-12$
-20
-30

PUBLIC LIFE

## National Indicators

Numerical values for four National Indicators are calculated by the coordinator at the end of each session as one means of measuring the general effectiveness and "health" of the society as a whole. Each indicator pertains to a different aspect of the society, as follows:

1) Food and Energy Supply (FES). This represents how well the society is adapting to its physical environment. Is it developing its
natural resources to meet the needs of its population? (The words "population" and "citizens" in this discussion of National Indicators actual porticipants
refer not only to the $\Lambda$ who to others but the are represented here abstractly through the National Indicators.)

Is it replenishing the resources that it consumes? A higher score means an abundant Food and Energy Supp1y.
2) Standard of Living (SL). This represents the consumption level of the society. How well are the citizens of the society living at the present time? A higher score means a higher Standard of Living.
3) Social Cohesion (SC). This represents how well different groups of citizens are integrated. Are some groups isolated and left out? Are there destructive conflicts between subgroups? The higher the score on Social Cohesion, the less the presence of destructive intergroup conflict.
4) Public Commitment (PC). This represents the degree of commitment by citizens of the society to its social structure and values. Are there large numbers of alienated citizens who feel estranged from the society and do not participate in it in a constructive way? The higher the score on Public Commitment, the less the degree of alienation among the citizens.

## Public Programs

These National Indicators may be raised by investing money in either of two broad Public Programs. The money is invested by giving it to the bank with the instruction that it be used for a specific Public Program. This money is "used up" in the Public Programs -that is, once invested it cannot later be withdrawn from the bank.

The programs are:

## 1) Research and Conservation.

The purpose of this program is to promote scientific research and activity in such areas as (a) developing and conserving the natural environment so as to increase the Food and Energy Supply, and (b) utilizing available manpower resources more effectively so as to raise the overall Standard of Living. 2) Welfare Services:

This program creates and expands a variety of Welfare Services for the citizens of the society, and copes with discontent, poverty, social unrest, and so forth. Investments in this program help to raise the Standard of Living as well as Social Cohesion and Public Commitment.

Any individual or group can invest any amount of money in either or both of these programs: The specific effects of these investments on the four National Indicators of Food and Energy Supply, Standard of Living, Social Cohesion, and Public Commitment are discussed below. The effects take place at the end of each session.

Any individual or group may decide to aid the society by advising its members on investment policies, work organization, or other matters which may indirectly affect any of the National Indicators and contribute to the overall vitality and effectiveness of the society.

Changes in the National Indicators
Each National Indicator begins at 100 for the first session. Many things have been mentioned that influence different indicators and the effects are summarized here and in Table:4.

1) Spontaneous decline. Each indicator automatically declines
by $10 \%$ between. sessions to represent a spontaneous decay factor.
2) Public Programs: Simbucks invested in the two programs described above raise the National Indicators; however, these programs have "administrative costs" and a Simbuck invested in them does not bring an equivalent rise in the National Indicators.
a) Research and Conservation. This program raises the Food and Energy Supply (FES) by $40 \%$ of the value of all new money invested in it; and Standard of Living (SL) by $10 \%$ of the value of all new money invested in it.
b) Welfare Services. This program raises Standard of Living (SL) by $10 \%$ of the value of all new money invested in it and Social Cohesion (SC) and Public Commitment (PC) by $20 \%$ of the value of all new money invested in it.
3) Industrial Production. Each passage purchased by BASIN lowers FES by two units but each passage completed raises SL by 1 unit. Each core word invested in by RETSIN raises SL by 1 unit but lowers PC by 1 unit.
4) Absenteeism. Each absentee lowers SL by 2 units and PC by 2 units.
5) Unemployment. Each unemployed person lowers SL by 3 units, SC by 3 units, and PC by $\not \mu_{\wedge}^{\prime}$ unit\&.
6) Riots. Each rioter lowers PC by 2 units and SC by the amounts indicated in Table 3.
7) Arrests. Each arrest lowers SC by 3 units and PC by 3 units.
8) Deaths. Each death lowers SL by 5 units, SC by 5 units, and PC by 5 units.
9) Individual: Goal Declarations: Each positive individual goal declaration ("Yes I'm satisfied") raises PC by 1 unit; each negative
declaration or change in individual goal ("No I'm.not satisfied" or " I've changed my individual goals"). lowers PC by one unit.

Maximum decline. No National Indicator will be lowered by more than 30 units in a single session for any sing1e cause although there is no limit to the size of decline from a combination of causes. To 111ustrate, if seven members were to die in a single session, SL, SC, and PC would only be lowered by 30 units rather than 35 . However, these Indicators might also be lowered additionally by absenteeism, arrests, etc.

Table 4 summarizes these effects.

Table 4. Effects of Investment and Other Actions on National Indicators

|  | FES | SL | SC | PC |
| :--- | :---: | :---: | :---: | :---: |
| Research and Conservation | $+40 \%$ | $+10 \%$ | 0 | 0 |
| Welfare Services | 0 | $+10 \%$ | $+20 \%$ | $+20 \%$ |
| BASIN | -2 units | +1 unit | 0 | 0 |
| RETSIN | 0 | +1 | 0 | -1 |
| Absentees | 0 | -2 | 0 | -2 |
| Unemployed | 0 | -3 | -3 | -1 |
| Riot马ers | 0 | 0 | -2 | -2 |
| Arrested | 0 | 0 | -3 | -3 |
| Dead | 0 | -5 | -5 | -5 |
| Individual Goal Declaration | 0 | 0 | 0 | $\pm 1^{\text {c }}$ |

[^1]Consequences of Different Values of the National Indicators
The basic income which group heads receive at the beginning of each session is affected by the state of the National Indicators, and the supply of Munchie Tickets available is affected by one of these indicators, Standard of Living. More specifically:

1) If all four of the National Indicators are at 120 or above at the beginning of a session, basic income will be increased by twenty percent for that session.
2) If any of the four National Indicators jis below ninety, basic income will be reduced by ten percent; if any is below eighty, income will be reduced by twenty percent; if any is below seventy, income will be reduced by thirty percent; and so forth down to ninety percent less for any session in which any of the National Indicators is below ten. Note that this applies to the income which BASIN and RETSIN receive also, although their assets in the bank are not affected by the National Indicators.
3) The society ends if any National Indicator falls below zero.
4) The number of Munchie Tickets available per session is equal to the value of the Standard of Living (multiplied by .7 for a Size Level One society, and 1.3 for a Size Level Three society).

## Government

There is no requirement that the society establish a government, and it may wish to operate without one. If any member or members wish to form a government, they may do so at any time. If a government is created, its supporters may organize and conduct it in any manner they choose. There are no formal rules regulating such a government.

## Special Events (Optional)

Sometime during SIMSOC, the coordinator may announce the occurrence of certain outside events affecting the society. You will not know in advance when the events will occur or what their nature is. They are mentioned here so that you realize that they are part of the game and not an arbitrary intervention in your society by the coordinator.

## Summary

The rules are less complicated than they first appear, as you will discover once SIMSOC is in process. All the details are included here, but they will not all be needed by everybody. The basic question many people have at this initial stage is simply, "What is the object of the game?" For you as an individual participant, there are several objectives:

1) To achieve the individual goal or goals you have set for yourself;
2) To help the basic group (or groups) to which you belong to achieve its goal;
3) To see to it that the society as a whole is a "success" -however you may wish to define this.

If you conscientiously try to achieve these objectives, the larger objective of learning will be achieved.

Name Date $\qquad$

1. Preferred type of group (Place a 1 next to your first choice, a 2 next to your second choice, and a 3 next to your third choice):
industry $\qquad$ political party $\qquad$ mass media $\qquad$ employee organization_ judicial council $\qquad$
2. Individual goal(s) (Check those you intend to pursue): power_ center of attention__ style of life security_popularity__ fun and excitement other (please specify) $\qquad$
$\qquad$

ASSIGNMENT SHEET
Form B

## Name

$\qquad$ Date
(The remainder of this form is to be filled out by the coordinator -- please leave it blank.)

1. You are the head of the following basic group: (Circle one)

NONE BASIN ‥ RETSIN . POP SOP EMPIN MASMED JUDCO
2. You are head of the following agency: (Circle one)

NONE SUBSISTENCE TRAVEL
3. You live in the following region: (Circle one)

RED
YELLOW
BLUE
GREEN
4. (Circle one, if appropriate)

MINORITY GROUP NON-MINORITY GROUP MEMBER

MEMBER
$\qquad$
Please record the fact that $\qquad$ is moving (name)
from the (Circle one) Red Yellow Blue Green Region to the (Circle one) Red Yellow Blue Green Region.

Note: A fee of $\$ 10$ must be paid to the bank.

PRIVATE TRANSPORTATION CERTIFICATE
Form D

## Session \# <br> $\qquad$

This is to certify that $\qquad$ has (name)
purchased a Private Transportation Certificate and henceforth is free to travel at will.

Fee $=\$ 25$
(signature or initials of coordinator or assistant)

LUXURY LIVING ENDOWMENT
Form E
Session \# $\qquad$
This is to certify that $\qquad$ has (name)
purchased a Luxury Living Endowment and henceforth is entitled to subsistence and five* munchie tickets for each session.

Fee $=\$ 25$
(signature or initials of coordinator or assistant)
*If available in the society. Otherwise, a pro-rated share of those available.
$\qquad$
This is to certify the transfer of: (Circle one)
Subsistence Agency Luxury Living Endowment
Travel Agency
Private Transportation Certificate
from: $\qquad$
(name of old owner)
to: $\qquad$
(name of new owner)
(signatures of both old and new owners):

To use transferred certificates, present this form with the original certificate of purchase to the coordinator.

Name of Group
Session \#
Name of Head $\qquad$

1. List the following people as employees (to be filled in during first session):
$\qquad$
$\qquad$
2. Changes in employment (to be used in later sessions):
a) Make the following additions to the list of employees:
$\qquad$
$\qquad$
$\qquad$
$\qquad$
b) Remove the following people from the list of employees:
$\qquad$
$\qquad$
3. Change the head of the group as follows:

Name of Old Head $\qquad$

Name of New Head
Authorization for change (Must include either (1) the signature of the old head or (2) the signature of all employees present for the session in which filed.)
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
4. Resignation. Please remove my name from the list of employees.
$\qquad$

1. For BASIN

## Passage \#

\# $\qquad$
\#
\# $\qquad$
\# $\qquad$
\# $\qquad$
2. For RETSIN:

Core Word
List of possible marketable words
$\underline{a^{\prime} s} \quad \underline{e^{\prime \prime} s} \quad \underline{i^{\prime} s} \quad \underline{u^{\prime} s} \quad \underline{u^{\prime} s}$
$\qquad$ $\underline{-}-\cdots$
$\qquad$
$\qquad$

$\qquad$
Please give me $\qquad$ to be charged to the (specify amount)

```
assets of (circle one): BASIN RETSIN
```

(signature of head)

WITHDRAWAL OF ASSETS FORM
Form I
Please give me $\quad$ (specify amount) $\quad$ to be charged to the
(signature of head)

WITHDRAWAL OF ASSETS FORM
Form I
Session \# $\qquad$
Please give me $\qquad$ to be charged to the (specify amount)
assets of (circle one): BASIN RETSIN
(signature of head)

WITHDRAWAL OF ASSETS FORM
Form I

Session \# $\qquad$
Please give me $\qquad$ to be charged to the
(specify amount)
assets of (circle one): BASIN RETSIN
$\qquad$
Please remove the following Minority Group Members from all positions they hold with any basic groups -- including head -- and from all subsistence and travel agencies they may hold:
(list names)
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Authorization (must be signed by any two non-Minority Group Members):
$\qquad$
$\square$

MINORITY GROUP MEMBER ACTION SHEET Form K

Session 非 $\qquad$
Please remove the following Minority Group Members from all positions they . hold with any basic groups -- including head -- and from all subsistence and travel agencies they may hold:
(1ist names)
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Authorization (must be signed by any two non-Minority Group Members):
$\qquad$

1. Creating and maintaining a SIMFORCE.
a) Name of head
b) Authorization rule (List the individual or the combination of individuals who are authorized to issue orders to the coordinator):
$\qquad$

Conditions (e.g., any of the above, two or more of the above, majority of the above, etc.):
$\qquad$
c) Initial size
Additions
Session \#
$\qquad$
(Check here when renewed: $\qquad$ )
$\qquad$
$\qquad$
c) Initial size_
d) Renewal: Session $\#$ Additions
Protected individuals (All of those who can issue orders are automatically
protected and need not be listed again. To remove such a person from pro-
tection, list his or her name under $2(\mathrm{~b})$ below.)
$\qquad$

Changes in protection:
a) Add
b) Remove from protection
3. Arrest the following individuals (\$10 per individual required):

Changes in arrest:
Add the following: $\qquad$
$\qquad$
Release from arrest the following: $\qquad$
4. Attack: Head of SIMFORCE being attacked: $\qquad$
5. Change the original authorization rule as follows: $\qquad$

Session \# $\qquad$
The following people wish to indicate that they will participate in a riot: Location of riot (circle one): RED YELLOW BLUE GREEN

GUARDPOST
Form N
Session \# $\qquad$
Post an anti-riot guard in: Region (circle one): RED YELLOW BLUE GREEN
(Fee: \$20)


EMPIN Membership card
Session \＃1
Name

MASMED Subscription

```
Session ## 1
```

Name $\qquad$ MASMED Subscription Session \＃ 2

Name $\qquad$

## Name

EMPIN Membership card Session \＃ 2
$\qquad$
Name

Party | Support |
| :---: |
| Session $\# 3$ |
| Sard |
| Sircle one） |

POP

Name
Party Support Card
Session \＃．$\overline{4}$
（circle one）
POP
$\qquad$
Party Support Card
Session $⿰ ⿰ 三 丨 ⿰ 丨 三 一$ 5
（circle one）
POP

Name


Name
Party Support Card

| Session $\#$ |
| :---: |
| （circle one） |
| POP |$|$

Name

| Farty | $\begin{aligned} & \mathrm{E} \text { Card } \\ & \text { n } \# 88 \end{aligned}$ |
| :---: | :---: |
| （circle on |  |
| POP | SOP |
| Name |  |
| Party S | Card |
| S | \＃ 9 |
| （circle on |  |
| POP | SOP |

Name $\qquad$
EMPIN Membership card

> Session \#_7

Name


EMP IN Membership card Session \＃ 8

Name

EMPIN Membership card Session \＃ 9

MASMED Subscription Session \＃4

Name $\qquad$

MASMED Subscription
Session \＃ 5
Name $\qquad$

MASMED Subscription
Session \＃6
Name $\qquad$

MASMED Subscription Session \＃ 7

Name

MASMED Subscription
Session \＃8
Name
MASMED Subscription
Session \＃ 19
Name

Individual Goal Declaration
Name $\qquad$ Session \# |
Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied.
No, I'm not satisfied.
I've changed my individual goals:
from
to
Individual Goal Declaration
Name $\qquad$ Session \#2

Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied.
No, I'm not satisfied.
$\qquad$ I've changed my individual goals:
from $\qquad$
Individual Goal Declaration
Name $\qquad$ Session \#3

Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied
No, I'm not satisfied.
$\qquad$ I've changed my individual goals:
from to

Individual Goal Declaration
Name $\qquad$ Session 4

Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied.
. No, I'm not satisfied.
___ I've changed my individual goals:
from
to
Individual Goal Declaration
Name $\qquad$ Session \#_ Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied.
No, I'm not satisfied
I've changed my individual goals:
from to

Individual Goal Declaration
Name $\qquad$ Session \# 6
Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied. No, I'm not satisfied.
$\qquad$ I've changed my individual goals:
from $\qquad$ to $\qquad$ -.

Individual Goal Declaration
Name $\qquad$ Session \# 7

Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied.
No, I'm not satisfied.
$\qquad$ I've changed my individual goals:
from $\qquad$ to $\qquad$ -

Individual Goal Declaration
Name $\qquad$ Session \# 8

Are you satisfied with how well you are meeting your individual goals? (check one)
___ Yes, I'm satisfied. No, I'm not satisfied.
$\qquad$ I've changed my individual goals:
from
to $\qquad$ -

Individual Goal Declaration
Name $\qquad$ Session \# 9

Are you satisfied with how well you are meeting your individual goals? (check one)
___ Yes, I'm satisfied.
No; I'm not satisfied.
$\qquad$ I've changed my individual goals:
from
to
Individual Goal Declaration
Name $\qquad$
Are you satisfied with how well you are meeting your individual goals? (check one)

Yes, I'm satisfied.
No, I'm not satisfied
I've changed my individual goals:
from $\qquad$ to


[^0]:    them. Individuals are pursuing a range of different personal goals, some

[^1]:    $\mathrm{a}_{\text {This }}$ means that if, for example, $\$ 10$ were invested in Research and Conservation, FES would rise by $40 \%$ of this or by four units. Similarly, SL would go up by one unit while SC and PC would not be affected.
    ${ }^{\mathrm{b}}$ See Table 3 for exact effects ,
    Cplus 1 for each positive declaration; minus 1 for each negative declaration or declaration of change.

