# Walk a Mile in Her Shoes:

## A Guidebook for Implementing Role-playing Simulation Games in the Planning Process

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**Abstract**

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A Guidebook for Implementing Role-playing Simulation Games in the Planning Process

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Role-playing simulation games can be used as tools in the planning process in order to navigate more effectively in situations that are contentious or involve disparate populations or perspectives. Such games help participants better understand and consider alternate perspectives, leading to improved results in the planning process. Planners can use games as decision-making, rehearsal, and public engagement tools. This research explores using games as decision-making tools with planners as participants. Three branches of theory inform the use of games in planning: positivism and rational planning; complexity and incrementalism; and communicative action and collaborative planning. These frameworks inform the use of games for testing, predicting, and problem-framing.

A process for designing and implementing games in the planning process is presented. The process is tested in a participatory action research framework, through implementation of a planning

game with Seattle-area planning professionals and students. Results suggest that role-playing simulation games have potential as tools in the planning process, providing planners and participants with an innovative, creative, and collaborative tool to address wicked problems involving heterogeneous populations.

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# Chapter 1: Introduction

My thesis explores the use of role-playing simulation games in the planning process in order to navigate more effectively in situations that are contentious or involve disparate populations or perspectives. My research posits that such games help participants better understand and consider alternate perspectives, leading to improved results in the planning process. Planners can use games as both decision-making and public engagement tools. As decision-making tools, planners, as participants, can use games to analyze or rehearse planning situations. As public engagement tools, members of the public, as participants, can describe and frame community problems or offer feedback on proposed projects or decisions. My research explores using games as decision-making tools with planners as participants.

I define "role-playing games" as those where the participants act the part of fictional characters. When a participant takes on a role different from her own (e.g., a developer acts the part of an activist), including the attendant goals and worldview of that role, she will need to put aside her personal biases to act out that character. I define "simulation games" as those where the situation explored in the game is fictional, though modeled on real-life problems or issues. Fictionalizing a game's situation frequently removes the emotional investment participants have in specific real-world outcomes, thereby encouraging collaborative solutions.

## Purpose of Study

The purpose of my research is to develop, describe, and test a process for designing and implementing role-playing simulation games in the planning process. To test the process, I will design a game and implement it with a group of practicing planners. My research anticipates the use of games as a public engagement tool; however, the participants in my study will be planners, rather than members of the public. This will accomplish two objectives: (1) developing buy-in among practicing planners that this tool is effective and worthwhile, and (2) keeping my study within the bounds of thesis-level work and an achievable timeline.

The intended audience of my work is planning professionals. This thesis explains why, when, and how to design and implement role-playing simulation games in the planning process. A planner will have three takeaways from my work: (1) an understanding of the purpose and appropriate applications of games in the planning process, (2) a framework for implementing such games, and (3) an example of a planning game. In addition, I intend the reader to develop an understanding of the importance of addressing social equity issues in public engagement at two levels: the subject (problem) of the planning process and the participants involved.

## Research Questions

There are four research questions specific to the experimentation phase of my research:

1. Is the game design and implementation process framework that I have developed effective? What modifications are needed?
2. Are games useful for analyzing planning situations and decisions?
3. Are games useful for public engagement?
4. Will practicing planners consider using games as decision-making tools in the planning process? Will they consider using games as public engagement tools?

The process of playing the game and debriefing participants during my study, including soliciting their opinions about their experiences playing the game, will provide answers to these research questions.

## Bounds of Study

This study considers only face-to-face games, not virtual or online games. While online games have significant potential to solve planning problems and engage the public, my interest lies in the local, contextualized nature of urban, suburban, or rural planning. Planning done for larger or more distributed audiences—regional, state, or federal planning, for example—may be more suited to virtual gaming. The face-to-face games I study are more suited to fine-grained, specific, contextual planning situations.

This study does not address computer games or computer simulations. Numerous studies, particularly in resource management, look at the use of computer simulations in gaming. These simulations are effective when detailed models exist or can be developed. My study focuses on a typical urban planning situation (public engagement around multiple solutions to improve a congested intersection) where the input of affected citizens and value judgments are more important to making a decision than detailed outcomes or scenario planning. In situations with complex systems, computer simulations, especially incorporated into a game as described by Mayer (2009), may be appropriate.

I will implement the experimentation phase of my research with a group of practicing planners in the Seattle, Washington, area. Especially after the passage of Washington State's Growth Management Act in 1990, many planning activities occur in the public sector with public input. Seattle is a city that values public input and the public process. I designed my game with these legal,

political, and cultural characteristics in mind. However, I intend my framework to apply more broadly to other regions in the United States, whether urban, suburban, or rural; and with or without growth management or other legislation that codifies the role of the planner. I do not intend my study to provide any quantitative proof of better planning outcomes. Instead, the study functions as a test of and opportunity to improve my game design and implementation framework, as well as the specific game I designed.

## Theoretical Framework

Three branches of theory inform my work: positivism, complexity, and communicative action, each of which corresponds to planning theory. Key concepts of each framework inform my research (see table 1.1).

Table 1.1. Theoretical Framework of Research

| ***Planning Model*** | ***Theoretical Model*** | ***Key Concepts*** |
|---|---|---|
| Rational | Positivism | Experiential learning, observability, defensibility |
| Incremental | Complexity | Path-dependency, limited prediction capability |
| Collaborative | Communicative action | Epistemology, group learning, dialogue, consensus |

Positivism corresponds to the rational planning framework. Rational planning is the attempt to apply the scientific method to the planning process. It follows a specific series of steps: identifying the problem, identifying potential alternatives (or solutions), evaluating each alternative, selecting and implementing an alternative, and evaluating the results. This has been the dominant paradigm in planning practice, incorporating public participation usually as part of the selection of an alternative or in an attempt to garner approval for the alternative selected. Key concepts from positivism relevant to my research are experiential learning, observability, and defensibility. Planners

add to their professional knowledge through experience and observation. Defensibility reflects the accountability planners have for their decisions through a transparent process.

Complexity theory corresponds to incremental planning. Incrementalism developed in response to perceived failures of rational planning, particularly the difficulties or impracticalities of developing and implementing a master plan. Incrementalism proposed to address the limits of bounded rationality, which refers to the limitations of the human mind as compared to the complexity of the problems we face (Brooks 2003). Instead of a comprehensive approach, incrementalism takes a step-wise approach to planning, by making an initial small decision in response to a situation, seeing how that decision plays out, then making another small decision later, and so on. Key concepts from complexity theory relevant to my research are path dependency and limited prediction capabilities. Planners make decisions knowing that those decisions constrain future possibilities. Because we cannot predict the future, planning decisions must be made in a climate of imperfect foresight.

Communicative action corresponds to collaborative planning. Collaborative planning places the planner in the role of facilitator between conflicting parties, and prizes communication and dialogue as the acts underlying community decision-making processes and action. Key concepts from communicative action relevant to my research are epistemology, group learning, dialogue, and consensus. As planning established itself as a legitimate profession with expert knowledge, planners disregarded other forms of knowledge. Planners gain much of their practical knowledge through their participation in and interaction with groups, particularly through dialogue. Planners have focused on the goal of building consensus by acting as facilitators between disparate groups.

The use of games in planning draws from all three frameworks, whether games are decision-making, rehearsal, or public engagement tools. First, games allow for experiential learning among participants. Game players are also able to observe the actions and learning process of other

participants during the course of the gameplay itself and during the debriefing process at the end. In addition, as a tool for analyzing planning situations, games fit into the "analyze alternatives" step of the rational planning process. Games used to test the results of policy changes fit into the positivist framework.

Second, path dependency shows that the possible outcomes of a game depend on the initial conditions (how the game is designed) and the decisions made by players during the course of the game. The specific outcome of a game is difficult to predict; however, understanding the constraints of the game's situation and structure allows for prediction about the range of possible outcomes. Games used to predict the outcomes of new policies fit into the complexity framework.

Third, games allow for the legitimization of multiple epistemologies, giving weight to both lay or local knowledge and formal or professional knowledge. Learning occurs through the shared, collaborative process of the game, at the level of the group and the individual. Collaboration in planning is a way of integrating the public more fully into the planning process. Games are a low-pressure way to collaborate on solutions or "try them on" to see what might happen. Games can also be structured to encourage consensus-building and deemphasize contention among participants. By playing the game, participants will have the opportunity for dialogue both as their characters in the game and as themselves discussing the results of the game. Games used to frame problems or engage the public fit into the communicative action framework.

## Significance of Study

My study is significant to both planning theory and practice. The current paradigm in planning theory—the communicative turn in planning (also called collaborative planning)—has made advances over earlier theoretical models. However, this model includes a number of assumptions

that reduce its effectiveness and utility in real world planning settings. In particular, communicative planning ignores the role of power dynamics and assumes that more communication always results in better planning outcomes. Using games in the planning process acknowledges and addresses power dynamics: fictionalizing participants' roles and the game's situation neutralizes power imbalances among participants. Additionally, games help structure communication, but with flexible frameworks that encourage, rather than stifle, participation. By describing a game design and implementation process, including a test of the process, my research will address this gap in planning theory with practical information immediately useful to planning professionals.

## Summary

Role-playing simulation games can integrate into the planning process as decision-making, rehearsal, and public engagement tools. My research develops a framework for game design and implementation. In order to test and improve my framework, I will design and implement a game with a group of Seattle-area professional planners. My study includes face-to-face games and does not include virtual games, computer games, or computer simulations. While I will design my game specifically for use with Seattle-area planners, my framework applies broadly to other regions in the United States. I draw from three theoretical branches to inform my work: positivism and rational planning; complexity and incremental planning; and communicative action and collaborative planning. Each framework offers key considerations in games and provides purposes for their use. My study is significant to both planning theory and practice.

In chapter 2, I outline a review of relevant literature. In chapter 3, I explain my methodology, including the process of designing and implementing games, and my planning game design. In chapter 4, I present the results of my game implementation. I review lessons learned and

discuss my results in chapter 5. Chapter 6 summarizes my findings, describes the limitations of my research, and suggests directions for future study.

# Chapter 2: Literature Review

Positivism, complexity, and communicative action form the three branches of theory relevant to using games in planning. Each corresponds to a particular planning framework: positivism to rational planning; complexity to incremental planning; and communicative action to collaborative planning. This literature review describes the tenets and brief criticisms of each theoretical branch, including how each larger theory applies to its corresponding planning framework; analyzes how planners can implement games in each framework (see table 2.1); and describes benefits and roadblocks to using planning games. I describe participatory action research (PAR) as a lens for public engagement and games as a type of PAR. This review does not focus on virtual games, computer games, or computer simulations.

Table 2.1. Theoretical Framework of Games

| ***Planning Model*** | ***Theoretical Model*** | ***Purpose of Games in Model*** |
|---|---|---|
| Rational | Positivism | Testing |
| Incremental | Complexity | Predicting |
| Collaborative | Communicative action | Problem-framing |

## Positivism and Rational Planning: Using Games for Testing

The University of Chicago developed rational planning as part of the systemic efforts to apply the scientific method to the social sciences (Brooks 2003). The scientific method (or hypothetical-deductive approach) follows four basic steps: (1) hypothesis, (2) deduction, (3) test, and (4) confirmation. The scientific method, which relies on gathering data through observations, emerged

as the legitimized methodology for discovering scientific knowledge in the positivist framework. This method of inquiry is based on three tenets. One, legitimate knowledge consists only of observational statements and deductive links between such statements. Two, science's ultimate goal is a unified system of statements and axioms logically connected to reality with objective observations. Three, statements are certain only if they are grounded in observation and belong to the logically unified, axiomatic system. Positivism recognizes only one realm of knowledge, and the goal of scientific inquiry is to discover that unified body of knowledge. Because there is only one universal and objective body of knowledge, only one legitimate and unified methodology exists to discover that knowledge: the hypothetical-deductive method (Polkinghorne 1983).

Ideal scientific theory exhibits six characteristics: it is explicit, universal, abstract, discrete, systematic, and complete and predictive (Flyvbjerg 2001). The scientific method aims to develop observable singularities in support of the ideal, unified theory. In classical science, the hypothetical-deductive model works in two directions, with the ability to explain past phenomena and predict future phenomena. Moreover, scientific explanations must meet two requirements: explanatory relevance and testability. Explanations can be either deductive-nomological (deductively related to universal laws) or probabilistic (inductively related to probabilistic laws) (Hempel 1966). Testability is accomplished by following the scientific method, which provides a unified methodology that can both falsify hypotheses and provide a replicable process to follow. If results can be replicated (the hypothesis is or is not repeatedly falsified), then the knowledge is more likely to be universal and, thus, true knowledge.

Rational planning, in the positivist framework, conforms to the scientific method by following a series of steps: (1) identify goals; (2) identify alternatives; (3) describe consequences of each alternative; (4) select an alternative; (5) implement the selected alternative; and (6) evaluate the results. This framework remains a dominant paradigm in planning practice today (Brooks 2003).

### Critiques of Rational Planning

Critics of rational planning find this framework unrealistic because it presumes rational behavior (Brooks 2003). This requirement of normative rationality is infeasible in planning practice (Alexander 1984). Rational planning fails to account for politics or power (Brooks 2003) by ignoring the political context in which planning occurs (Alexander 1984). Rationalism accentuates utility as the goal, ignoring distributive effects of policies (Brooks 2003). Davidoff (1965) argues that in order to solve the social equity problems of society, planning must take an approach beyond mere technical problem-solving. The rational paradigm thus fails to address the political and ethical considerations inherent to planning (Klosterman 1985). Rational planning also downplays public participation (Brooks 2003), which is desirable in a field that purports to serve the public interest. In addition, as a social science, planning has limited potential for developing predictive theory. The ability to make predictive theory is a primary distinction between the social and natural sciences (Flyvbjerg 2001); attempts to develop predictive theory in planning, therefore, are misguided.

### Games in Rational Planning

Early game theory discussed strategic games as determined, such that all possible outcomes are predictable. Strategic games are those whose outcomes depend on the strategies and skills of individual players involved, in contrast to probabilistic games (games of chance). Early game theorists of the mid-twentieth century focused on discovering solutions to specific games and replicating the solutions of other theorists (Dimand and Dimand 1992), much in the paradigm of the scientific method. Especially in the 1920s through early 1940s, game theorists (usually mathematicians) studied two-person, noncooperative games (Leonard 1992). These zero-sum, or win/lose, games involved two players who each strategize independently to maximize her own best outcome at the expense of the other player. Von Neumann and Morgenstern, the founding fathers

of game theory, demonstrated finite solutions for all zero-sum games (Raiffa 1992). In other words, under certain conditions, all possible outcomes of a game were finite and predictable.

Roth (1995, 22) categorizes three uses of games that fall under the positivist framework: "Speaking to Theorists," "Searching for Facts," and "Whispering in the Ears of Princes." The first category includes experimental games intended to provide further evidence in support of theory. The second category refers to experimental games intended to discover and isolate the effects of variables. The third category involves experimental games intended to provide empirical evidence for policy choices (Roth 1995). Ostrom, Gardner, and Walker's (1994) work reflects Roth's third category of game uses, where games provide a method of testing rule changes in order to identify policy changes that will result in optimum outcomes. Additionally, games can be used experimentally to understand the functioning of a system by altering rules and comparing outcomes that result from different rule sets (Mayer 2009), reflecting Roth's (1995) second category of game uses. Games in the positivist framework are rigid-form, rather than free-form, and rely on tightly prescribed, limited rules for action (Mayer 2009). These strict rule sets enable games to be replicable and conform to the scientific method. Games can also be used for testing models, as demonstrated by Gourmelon et al. (2013).

## Complexity and Incrementalism: Using Games for Prediction

Incrementalism developed in response to the failings of rational planning (Brooks 2003). Lindblom (1959) describes the impossibility of using the rational framework to address complex problems; instead, decision-makers engage in a series of smaller decisions, using previous results and experience to dictate current decisions. In this model, a planner makes small, incremental steps, iteratively evaluating results, instead of attempting a comprehensive solution (Lindblom 1959). While

incrementalism developed before complexity theory was first described, it represents an application of this theoretical framework to planning practice.

Complexity theory describes dynamic, complex systems, which are not the simple, linear systems of classical science, and identifies a number of defining characteristics. First, any phenomenon studied is part of a system that is more than simply the sum of its parts. Classical science is reductionist in nature, seeking the smallest individual agent or variable that can be isolated and related to other variables. Complexity theory argues that the characteristics and behaviors of the entire system cannot be explained simply by the characteristics and behaviors of the system's components. The interactions, and results of interactions, between these components form a whole, complex system (Allen and Holling 2010) such that the sum of a system's components is greater than the individual components. Juarrero (1999) calls this correlation and coordination between parts a defining characteristic of a system (versus an aggregate). These interactions form an underlying order and structure (Alberti 2008), which consists of both organization and internal and external structure (Juarrero 1999). These emergent properties are characteristic only of the whole system, not of the individual components of a system.

Complex systems exhibit nonlinearity, including positive feedback loops (Arthur 1994). Nonlinearity occurs when the results (outputs) of a system's interactions are not proportional or predictable based on the inputs (Alberti 2008). Complex systems are open systems that interact with their environment, rather than the closed systems of classical science. Most systems are open systems; "[o]nly the entire universe is closed and isolated" (Juarrero 1999, 110).

Complex systems are hierarchical, such that the upper-level structures constrain the behavior of those structures nested below (Alberti 2008). Systems also do not have a single, stable point of equilibrium; multiple equilibria are possible (Arthur 1994). Moreover, path dependency shows that current driving forces only partially explain the current state of a complex system. As chance events

occur, the system develops along a different set of pathways, and the interaction rules evolve as the system evolves. Small changes at the beginning can result in quite dramatically different outcomes (Arthur, Ermoliev, and Kaniovski 1994). Gould (1990) calls this contingency; Arthur (1994) refers to this as historical path dependency; and Smith and Jenks (2006) describe this as the current state of the system relating to its previous states.

Social scientists have applied complexity theory in a variety of ways, including the search for underlying structures and their effect on human behavior. Byrne and Callaghan (2014) describe participatory processes as a way to glean information from actors in a system whose actions have effects on that system. Indeed, they argue that society's complex systems "can only be understood and changed if the role of reflexive human agents is recognized and incorporated within the whole process of understanding as a basis for change" (Byrne and Callaghan 2014, 249). The emergent characteristics of societal systems depend on the individual interaction and behavior of individuals. These characteristics cannot be understood without looking at the entire system, the actors within it, and the interactions between actors and between actors and their larger environment. The emphasis here is on the structure of society (the system) and how human agents influence that system (emergence). By understanding this, one can discover how to change the system's structure in order to effect change on human behavior—in other words, how to change the hierarchical structure in order to constrain the behavior of individual agents.

Incrementalism fits with complexity theory in its recognition of path dependence. Rather than attempting a comprehensive, overarching solution, incrementalism allows for continual evaluation of current conditions, with smaller actions aimed at addressing current conditions. Incrementalism also recognizes the limits of bounded rationality in the face of complex, open, nonlinear systems, proposing a series of small, reactive steps rather than a large effort aimed at wholesale change of the system. Hopkins (2001) echoes these ideas with his characterization of

major planning decisions: they are interdependent, indivisible, irreversible, and are made with imperfect foresight. Planning is therefore the setting of a path (Hopkins 2001) and the continual adaptation to the results and anticipated outcomes of that path.

### Critiques of Incrementalism

Critics of incrementalism argue that this framework discounts situations where comprehensive planning is appropriate or necessary. By its nature, incremental planning addresses problems in a piecemeal fashion, which is not appropriate for new problems or for addressing public dissatisfaction with current policies. Incrementalism is politically conservative, favoring the status quo and leaving current institutions unchallenged. Similarly, this framework favors powerful members of society in that it encourages planners to make decisions that are feasible, that is, supported by those already in power. Incrementalism suggests only small solutions for large problems with its emphasis on small steps. The potential for disaster and the difficulty in addressing a wrong course of action both increase under this framework as well (Brooks 2003).

### Games in Incrementalism

Game theory revolutionized economics; instead of the individual, rational man of neoclassical economics, who makes decisions in isolation, the rational man of experimental economics makes decisions in the context of the decisions made by other players (Schotter 1992). Game theory also spread to other social sciences in the mid-twentieth century, particularly sociology and political science. Researchers applied strategic game theory to operations research, management science, and world politics in the post-World War II era, accelerating social science's acceptance of this model. Researchers in other disciplines applied von Neumann and Morgenstern's 1940s-era work to account for other sociopolitical behaviors related to cooperation and competition. Game theory

aimed to discover the principles behind rational choice (decision) behavior; social scientists formulated problems as problems of decision, using strategic games as explanations for social phenomena (O'Rand 1992). Games thus became a way to understand and predict the behaviors underlying social problems.

Game theory rose to prominence well before the development of complexity theory, but both share common concerns: path dependency of outcomes, multiple possible equilibria, and emergence of behaviors based on interactions between components (players). Morgenstern saw games as a way of predicting mutually exclusive institutional arrangements that could arise out of a given set of conditions: what complexity theory terms path dependency and multiple equilibria. Game theory modeled multiple equilibria with games that had more than one possible solution (Schotter 1992). Morgenstern emphasized unplanned social structures rather than planned institutions (Schotter 1992), and other game theory analyzes outcomes in terms of interactions between players (Riker 1992): what complexity theory describes as emergence.

Games in the incrementalist framework are more free-form than in the rational planning framework. Free-form games have been used for predicting actions and responses within specific contexts, and for contingency or scenario planning (Mayer 2009). Games are particularly suited to address environmental dilemmas, such as common pool resource problems, as demonstrated by the rich literature on this application (e.g., Ostrom, Gardner, and Walker 1994; Kartez 1991; Gourmelon et al. 2013; Krolikowska et al. 2007; Rivera, Sheer, and Miller 2013; Simpson 2001). In particular, games can be used empirically to predict or model the real-world outcomes of resource management policy changes, including individual behavior, as demonstrated by Ostrom, Gardner, and Walker (1994). While the initial proponents of game theory presented it as a normative theory, it quickly developed as a descriptive theory, such that games are used to describe behavior, particularly strategic choice behavior (Riker 1992).

Complexity theory and incrementalism recognize the interdependent relationship of hierarchical structure and emergent behavior. Policies act as hierarchical structures in planning, as do rules in games, and these structures determine possible outcomes. Planners often deal with social dilemmas like common pool resource problems, so it is important to structure these situations to encourage success (Kartez 1991). Rules constrain games and act as the hierarchical structure in complex systems. The rules of a game govern player behavior and avoid chaos (Liberman 2013). By changing the rules of a game, possible outcomes change. In fact, a small rule change can result in large effects on outcome (Ostrom, Gardner, and Walker 1994), reflecting the nonlinear dynamic of games and reinforcing Arthur's (1994) observation that small initial changes can produce dramatically different outcomes. By examining the effects of rule changes on game outcomes, planners can analyze policies effectively (Ostrom, Gardner, and Walker 1994) and predict real-world effects.

## Communicative Action and Collaborative Planning: Using Games for Problem-Framing

Collaborative planning arose as another response to the rationalist planning paradigm dominant through the mid-twentieth century. Innes and Booher (2010) describe three trends underlying this shift away from rationalism: (1) the move toward including stakeholders along with experts in the decision-making process; (2) the increasing recognition of scientific knowledge's limits and the legitimacy of other forms of knowledge; and (3) the inclusion of forms of reason other than instrumentalism (e.g., storytelling). In this paradigm, knowledge is validated communally through dialogue, which forms the basis for action—communicative action—and planning becomes a form

of collaboratively deciding how to act (Healey 1992) with the planner as facilitator of community decision-making processes (Brooks 2003).

Collaborative planning allows for multiple forms of knowledge and depends on dialogue both to develop and validate knowledge and to decide among competing knowledge claims. Participants critique knowledge claims based on Habermas's criteria of comprehensibility, integrity, legitimacy, and truth, which allows for a rich plurality of voices (Healey 1992). Rather than reason being an individual undertaking, measured against scientific knowledge and logic, Habermas describes reason as a contextualized "mutual understanding," developed by a particular group of people in a particular place and time (Healey 1992, 150). Collaborative planning views communication (both verbal and non-verbal) as the essence of planning, with the planner working to build consensus between conflicting parties (Brooks 2003). Collaborative planning proposed to address the false duality of rationalism and relativism, with a way to construct knowledge collectively as a basis for action.

Innes and Booher (1999) describe planning through consensus-building as a way of learning, rather than simply an arena for communication. Consensus-building in the communicative planning paradigm involves four steps: storytelling to describe the situation, task-setting, dialogue, and consensus (Innes and Booher 1999). They describe role-playing and Levi-Strauss's (1966) bricolage (referring to a process of assembling and recombining disparate ideas in order to form new knowledge) as mental models for the planning process. Stories and storytelling are central to knowledge and action in planning, including the production of knowledge and translation from the social sciences (Sandercock 2003).

Forester (1999) describes a transformative theory of social learning that applies to the learning possible in deliberative planning exercises. The type of learning he discusses occurs when both individuals and their arguments change through the process of dialogue and negotiation. We

learn from what others say and how they say it. Forester's logic extends to the type of learning possible through role-play: we learn from what we say and how we say it, while acting the part of someone else.

Decisions and agreements are one important product of collaborative planning processes. However, collaborative processes also build community capacity, deepen policy knowledge, create contextual solutions, encourage creative problem-solving, build capital (social, political, and intellectual), and empower underrepresented groups (Innes and Booher 2010; Forester 1999).

Innes and Booher (2010) argue that collaborative processes are well suited to addressing wicked problems. Wicked problems are those that are difficult to define and separate, for which resolutions are difficult to find, and for which no optimal solution exists. Wicked problems are identified as such only through the problem-solving process. Most planning problems are wicked problems (Rittel and Webber 1973). Without an optimal solution, the planner's task is, jointly with or on behalf of the public, to find a resolution that improves the situation. Collaborative processes build community capacity that allows for this process of discovery. As collaborative processes, games are suited to engaging the public to frame wicked problems and develop possible solutions. Indeed, for the resources invested in a collaborative process to be worthwhile, the problem should not be straightforward (Innes and Booher 2010).

### Critiques of Collaborative Planning

Critics of the collaborative planning approach note that this framework idealizes the public's preferences, assuming that more dialogue among empowered stakeholders will always result in better outcomes and that all views are noble. However, this approach ignores the plurality of voices, their sometimes radically divergent views, and the narrow-minded and prejudicial beliefs of some members of the populace, even as it purports to include them through the collaborative

construction of knowledge. Consensus and agreement are not guaranteed, even (or especially) when including all affected stakeholders. Collaborative planning overlooks the unequal distribution of power, again emphasizing communication as the panacea for society's ills. This framework also highlights process rather than content, assuming that any outcome is desirable as long as communication among affected stakeholders occurs. Additionally, some mundane planning activities, such as collecting information and data about a problem, may not be suited to the intensive process of collaborative planning (Brooks 2003).

### Games in Collaborative Planning

While game theory has not specifically addressed communicative action or collaborative planning, some parallels exist, particularly in cooperative games. The prisoner's dilemma is a well-known example of a situation where the outcome is better if participants can cooperate (Roth 1995). Ledyard (1995) proposes that many public goods provision problems are prisoner's dilemma problems. Ledyard's assertion suggests that, in such circumstances, cooperation among parties may result in better outcomes.

In a series of empirical and field experiments, Ostrom, Gardner, and Walker (1994) demonstrated that cooperation between players increased and destruction of common resources decreased with institutional measures, face-to-face communication between players, and opportunities to sanction other players. Far from Hardin's (1968) tragedy of the commons, participants in these games collaborated to develop efficient management strategies. When the researchers provided participants with sufficient information and an arena in which they could communicate, participants collaboratively developed management and sanctioning strategies (Ostrom, Gardner, and Walker 1994). This emphasis on communication echoes the same emphasis in the collaborative planning framework.

In Innes and Booher's (2010) collaborative process model, role-playing is a specific type of dialogue that allows trying on and acting out different ideas and scenarios. Innes and Booher (1999; 2010) focus on the actual roles participants play in their lives, however, both as individuals and as representatives of their stakeholder groups. They assume participants have at least a minimal understanding and awareness of their roles, and that these roles differ from those of other participants. In Innes and Booher's description of consensus-building, participants role-play within their real-life roles, with the freedom to experiment outside what would be acceptable in the outside world. They cite three primary advantages of role-playing: the potential for deep learning, the development of innovative thinking, and the opportunity for play. Play is particularly important, as it allows for creative processes and full engagement without the restrictive boundaries of intractable problems (Innes and Booher 1999).

A role-playing game used as a participatory tool on Ushant Island, France, demonstrates the potential to use games for participation and for model testing. The game's goals were to provide details for a model of environmental management, raise community awareness, and present the model to biosphere managers. Games used in this way are an effective way to incorporate local knowledge, allow common access to knowledge, legitimize the model/game approach, and promote knowledge acceptance and viewpoint sharing (Gourmelon et al. 2013). The communication and dialogue between participants, and between participants and researchers, reflects the collaborative planning approach.

Games can address the imbalance of power inherent in many public planning processes. As demonstrated in Brazil, role-playing games are effective in engaging and educating populations lacking the technical skills to otherwise participate in public processes (Camargo, Jacobi, and Ducrot 2007), thereby empowering these populations. While it is tempting to equate gameplay with the idealized consensus approach of Habermas's communicative action, a better approach is the

recognition that power is not just a destructive force, but also a generative force. This reflects Flyvbjerg's second approach to power, after Machiavelli, Nietzsche, and Foucault: the story of power is told through real histories of conflict. While "consensus" is often a stated goal of planning, a framework that suppresses conflict may also suppress freedom in the pursuit of no-matter-what agreement. Instead, participants who collaborate are willing to work together. Collaborative frameworks allow for allocating power as a way of recognizing the potential for conflict (Shdaimah and Stahl 2012). Conflict is not suppressed, but is given voice, and the opportunity for transformative learning through argument and deliberation (Forester 1999) appears. Role-playing simulation games allow for freer expression of this conflict with less fear of real-world repercussions.

## Benefits to Using Games

Simulation games are an excellent way to engage the public in the planning process because of their capacity for teaching complex subjects (Kennedy 1973). These games are particularly effective at integrating the complexity of both technical-physical and social-political aspects inherent in policy problems (Mayer 2009). Games allow the public to participate actively, gain hands-on experience, and address issues concretely (Gourmelon et al. 2013). Gameplay makes situations less formal, less tense, and more relaxed (Camargo, Jacobi, and Ducrot 2007).

Role-playing games provide opportunities for integrating three types of learning: learning of concepts, of methods and strategies, and of behaviors and customs (Camargo, Jacobi, and Ducrot 2007). Games are effective learning environments because they are responsive and reflexive: they respond to the participant's actions and allow her to reflect on her learning experience (Kennedy 1973). In addition, games bridge social divides and improve dialogue between players, creating an

environment more conducive to learning (Camargo, Jacobi, and Ducrot 2007). Players feel a sense of safety within games, further facilitating a learning environment with freedom to experiment and create (Mayer 2009). Games also teach interpersonal skills, problem structuring, and decision predicting (Krolikowska et al. 2007). The individual and social learning that occurs during gameplay is transferable to the real world (Mayer 2009). Participating in a role-play allows participants to identify with the character they are playing and more carefully consider the game's scenario (Wheeler 2006). Games build capacity, particularly for marginalized groups (Camargo, Jacobi, and Ducrot 2007). Games provide an arena for providing participants both information about the planning problem and space for meaningful willingness to cooperate. These elements increase participants' willingness to cooperate on a solution (Kartez 1991; Ostrom, Gardner, and Walker 1994).

## Potential Roadblocks to Using Games

A number of roadblocks to effective game implementation exist, most of which the planner can overcome through thoughtful design. Participants may not trust the game facilitators if the game involves scenarios where participants role-play themselves, as this may feel too intrusive. Participants may express this distrust through disengagement or even absenteeism. Planners must pay careful attention to the purpose of the game in the context of their communities. For example, researchers in France received feedback from their participants that the game was better suited as an educational, rather than a mediation, tool, so they revised their implementation strategy in order to accommodate this context (Gourmelon et al. 2013).

Even with well-designed role-plays, the facilitator ultimately holds authority and power that the participants lack. Van Ments (1999) suggests two ways to overcome this barrier: by acknowledging explicitly that the facilitator is in control or by involving participants in the design of

the role-play. While van Ments argues that the facilitator cannot overcome this power imbalance, a facilitator can approach the game as a collaborative process, where power is shared and expression of conflict is permitted (Shdaimah and Stahl 2012). When used as a public engagement tool, including members of the public in the design of the role-play may also diffuse the potential power imbalance.

Role-plays run the risk of stereotyping characters and of making participants feel shy, frustrated, or disengaged (Sandercock 2003). One way to overcome the stereotyping risk, as well as increase relevancy and saliency, is by involving participants in the design of the game. That way, planners gain a better understanding of the situation and which roles are important (Camargo, Jacobi, and Ducrot 2007). Role bias is another form of stereotyping in which participants are assigned roles that correspond to the stereotypes of their gender, race, or ethnicity. Random assignment of roles may reduce this bias. In addition, if the facilitator observes instances of stereotyping, this can become a topic of discussion in the debriefing (van Ments 1999).

Games that are too simple may have limited potential for learning and limited applicability in the real world (Camargo, Jacobi, and Ducrot 2007). Similarly, achieving the right degree of abstraction determines how salient the game is for participants. Game designers need to balance the abstraction needed to free participants from their daily life with the concrete reflection of reality needed to apply game lessons to real life (Dionnet et al. 2007). By their nature, games can only address a single situation at a time and engage a limited number of stakeholders (Camargo, Jacobi, and Ducrot 2007). Repetition of the game with a broader range of stakeholders can engage more participants.

## Participatory Action Research and Public Engagement

Participatory action research (PAR, also called participatory research or action research) is a type of collaborative research as described by Shdaimah and Stahl (2012). This form of research integrates non-academic stakeholders into the planning, implementation, and interpretation of research. PAR provides a conceptual framework for public engagement in the planning process. PAR includes three emphases: research, education, and action, particularly sociopolitical action (Fals-Borda 1991). The *popular participation* aspect of this type of research is particularly important, as PAR researchers emphasize that "the vision and view of the world that is produced by the many will be more humane, rational and liberating than the dominating knowledge of today that is generated by the few" (Gaventa 1991, 131).

Polkinghorne (1983) and others describe the pluralistic nature of epistemology, that is, the existence of multiple knowledges. A single truth corresponding to reality does not exist; instead, communities accept some truths, and this multiplicity of views composes reality (Ogilvy 1977; as cited in Polkinghorne 1983). Polkinghorne recognizes Ogilvy's "communities" as varying "systems of inquiry," such that each system of inquiry represents a particular epistemology. Epistemological pluralism allows for more than one type of knowledge. Indeed, only by combining and contrasting differing knowledges can one's own framework be contextualized and understood. A fuller understanding develops by admitting alternate frameworks of knowledge. Multiple knowledges enrich our understanding of the world. PAR seeks to empower participants not only to produce this knowledge, but also to recognize themselves as sources of legitimate knowledge (Rahman 1991).

The need for participation in the planning process is well established. PAR relates to public participation on two levels. First, PAR can be used in its traditional sense, in order to collaborate with the public in pursuit of research (discovering new knowledge), education (group learning), and action (empowering citizens). In this framework, PAR emphasizes the production of local

knowledge, deemphasizing but not devaluing formal or scientific knowledge. Citizens become the sources of knowledge (Fals-Borda 1991), rather than the passive recipients of it.

Second, PAR points the way toward a specific framework of public engagement—one that seeks to discover and incorporate local knowledge into the process. Among other goals, PAR generates group knowledge that may indicate a course of action (de Roux 1991). In the planning process, PAR can serve to define a problem and seek solutions to that problem, rather than using the public engagement process simply to rubber-stamp decisions already made by experts. PAR also dissolves the hierarchy between researcher and researched (Gaventa 1991), such that all participants are on equal footing; Fals-Borda (1991) describes this breakdown in asymmetrical relationships as the essence of participation. Action research provides a means of increasing community capacity, particularly in leadership (Forester 1999). Viewed through the communicative action lens of planner as facilitator, PAR points us toward a more effective engagement process, one where citizens' knowledge is valued, all participants learn together, community members build their individual and collective capacities, and new courses of action emerge.

## Games as Participatory Action

Games in the participatory action research (PAR) framework engage two types of potential game participants: planners and the public. My study will address the first type, with planners as stakeholders in the ultimate results of my work. I intend my game framework as a planning tool; planners, as the end users of this tool, have a stake in the results of my work. By including a group of practicing planners in my research as participants, my work becomes collaborative. The game will allow for a collection of voices, rather than my own voice having the final authority. My study will contribute what Shdaimah and Stahl (2012) call a "thoughtful reflection" to society by introducing a

new planning tool directly to those who will use it. However, my approach is not prescriptive; it is collaborative, seeking to collect the experience and practical judgment of professional planners and learn with them through the implementation and interpretation of my study.

The second type of game participant is members of the public. As a public engagement tool, playing games highlights and makes explicit a multitude of voices. While participants are challenged to act the part of other characters in the gameplay itself, the debriefing period is perhaps more important for the process of learning (van Ments 1999), especially communal, collaborative learning. During the debriefing, participants have the space to express their opinions and talk about their perceptions of the process. Forester (1999) notes that transformative learning in planning occurs through reframing ideas and critiquing expert knowledge (among other activities). In my game structure, participants will reframe their ideas about the scenario first by acting the part of a character in the game, and second by reflecting on this shift of viewpoint. Players will also have the freedom to critique expert knowledge during the game. I will present the "expert knowledge" as part of the scenario in the form of solutions to the problem. I will give participants some hints about their practical, local, lifeworld knowledge about how these solutions may operate in the real world once they are implemented. The structure of the game deemphasizes the formal, expert knowledge and provides permission to critique it using practical knowledge. Players are thus given the safe space to critique formalized knowledge—enhancing the transformative learning potential of the process—while practical knowledge is put on equal footing with formal and technical knowledge. The stakeholders integrate fully into the process as equal participants.

Games provide opportunities for learning based on experience and mistakes. My research achieves this experiential learning for both the study participants and the researcher. For the study participants, gameplay affords the freedom to make mistakes in a safe environment without lasting consequence. If the characters in the game fail to make a recommendation about the preferred

course of action, no real-world situation, institution, or relationships are at risk. Instead, the planner-participants are afforded a learning opportunity, discovering why no solution was reached, discussing the difficulties of compromise in the face of multiple viewpoints, and speculating how future processes (a replay of the game, perhaps) may be structured to favor different outcomes. In addition, after playing the game, participants will have the experience of gameplay in a planning setting—experience they can continue to learn from and use in future professional situations.

For me as researcher, the experiment is essential to the applied aspect of my research. The final result of my thesis will be a framework for practicing planners to use in the design and implementation of games. While I could simply prescribe a process for designing and implementing games, my process will remain untested without the opportunity to apply my research. The test serves as an opportunity to learn from experience and mistakes, and iteratively incorporate that learning into my work.

## Summary

Three branches of theory provide frameworks for describing, understanding, and using games. Rational planning corresponds to positivism. This framework emphasizes the importance of testability, experiential learning, and defensibility in planning. Games used for testing fit into this framework. Games can be used to test the effects of policy changes on outcomes, to understand the functioning of a system, or as empirical evidence for policy-making.

Incremental planning corresponds to complexity theory. This framework emphasizes the importance of understanding historical path-dependency and limited prediction ability. However, games used for prediction fit into this framework, particularly when used as scenario planning

exercises, in order to understand the bounds within which outcomes are likely to fall. Games can be used to predict the range of outcomes likely from implementing new policies or new rule changes.

Collaborative planning corresponds to communicative action. This framework emphasizes the importance of communally constructing knowledge through dialogue. Games used for problem-framing and public engagement fit into this framework. Games can be used as part of deliberative planning practice, to enhance individual and group learning, to build bridges across social divides and build social capital, and to express conflict with less tension.

Games provide many opportunities for learning and participating in a safe environment. This learning is transferable to real-world situations. Careful attention to the design and implementation of games can overcome some of their potential roadblocks. Participatory action research (PAR) provides a lens for understanding and designing public participation processes. Games are a type of PAR and provide many learning opportunities for participants and the facilitator.

# Chapter 3: Methodology

As Brooks (2003) notes, even the most technical, analytic, straightforward analyses include value judgments about which topics deserve attention and which methodologies are used to study those topics. Even formal knowledge derived from analytical processes is subject to a planner's interpretations in what those facts practically mean, in the real world, and how that knowledge is applied in pursuit of a particular course of action. In order for planners to do work that is defensible and transparent, we must make our values explicit. Stating these values upfront allows others to evaluate our work, and allows us to remain self-critical. At the same time, we cannot purport to speak for the public without their participation. Thus, planning should be conducted in a values-based, participatory approach. Using games in the planning process is one approach in this framework.

In order to study games as planning tools, I will conduct my study in a way that is reflective of the process in which the tool is intended to be used. My methodology reflects this through a participatory action framework. The essential discoveries of my work will be collaborative discoveries, benefiting from the practical knowledge participants bring to the table and the transformative learning that occurs through the participation process. Rather than discovering a universal, objective explanation about planning, my research will develop a contextual tool for the planning process. Rather than seeking to prove a set of facts, this framework provides a way for planners to develop a system of values and value judgments in collaboration with each other and with the public—and have some fun in the process.

In this chapter, I delineate and explain the seven-step game design and implementation process I have developed. I illustrate this process by describing the specific design of my planning game, the Game of Springfield, including the decisions I made at each stage.

## Seven Steps to Designing and Implementing Games

In order to design and implement a role-playing simulation game, planners will follow these seven steps, based on the process described by van Ments (1999):

1. Identify planning situation
2. Identify purpose and audience of planning game
3. Identify goals and desired or expected outcomes of game
4. Develop structure of game
5. Develop scenario, problems, solutions, and character roles
6. Implement the game
7. Evaluate success of game and incorporate "lessons learned"

These steps are similar to the rational planning process followed in many planning situations, and can be fit easily into a larger planning process. Below, I describe each step of game design and implementation, and illustrate each step with examples from my planning game, the Game of Springfield.

### Step One: Identify Planning Situation

At this stage, the planner fully describes the planning situation in which she will implement a game, answering the *who, what, where, when,* and *why* of the situation. The more clearly articulated the situation, the better. Identifying the planning situation serves to identify the outer bounds of the game.

For my study, the *who* is professionals or students with planning education or experience in the Seattle metropolitan area. The *what* is a realistic planning situation, similar to one they are likely

to encounter in the real world. In the game, the fictional city of Springfield has identified the intersection of Main Street and Oak Street as increasingly congested and problematic. An influx of new residents and continued business growth in Evergreen, the neighborhood around this intersection, exacerbates the problem. The *where* is in a fictionalized city similar to Seattle. The *when* is during the planning process, after a failed public hearing process. The planning department decided to try a different strategy, convening representatives of residents, employers, and employees of the neighborhood, in order to discuss and evaluate the proposed alternatives. This represents a stage during the public engagement process after public hearings but before the department makes its final recommendation to the Springfield City Council. The *why* is because the initial public hearing process proved quite contentious and the planning department wanted to try a different strategy. Additionally, my game will test my game design process and demonstrate for practicing planners one potential use of games in the planning process.

### Step Two: Identify Purpose and Audience of Planning Game

An effective game needs a defined purpose and audience. At this stage, the planner answers three sets of questions.

*What is the purpose of this game? Why a game, rather than a different tool?* Abstract games are best for achieving educational goals, while realistic simulations are necessary for decision-making (Dionnet et al. 2007). For my study, I have two purposes. First, the Game of Springfield will test the process I have designed. Second, the game will expose the participants to the idea and experience of using a planning game, making it more likely they will consider using games in their future work.

*Who will participate in the game? Who will benefit, and who might not?* Practicing planners and those with planning education will participate in the game. These participants all have experience or education in urban, suburban, or rural planning settings. The planner-participants and the researcher

will benefit from the game; those who do not participate may not benefit from the game or the research.

*What will the results of this game be used for? Will they be published or shared, and if so, where and to what audience?* I will use the results of this game to refine my proposed process for designing and implementing games in the planning process. I will share the results in the following chapters of my thesis.

### Step Three: Identify Goals and Desired or Expected Outcomes of Game

At this stage, a planner clarifies the goals and desired or expected outcomes of the game.

I have two *goals* for the Game of Springfield test sessions. One is to provide answers to my four research questions:

1. Is the game design and implementation process framework that I have developed effective? What modifications are needed?
2. Are games useful for analyzing planning situations and decisions?
3. Are games useful for public engagement?
4. Will practicing planners consider using games as decision-making tools in the planning process? Will they consider using games as public engagement tools?

My second goal is to demonstrate to a small group of professional planners in the Seattle area the utility and effectiveness of games as decision-making, rehearsal, and public engagement tools. My *desired outcomes* are answers to my research questions, modifications to my game design and implementation process, and participants who see the value and use of this planning tool.

I have identified three sets of *expected outcomes* for the game, the participants, and the researcher. For the game itself, I expect that agreement about a solution will emerge through the process of collaboration and dialogue. This solution likely will be one of the four solutions presented as part of the game scenario, though the participants may collaborate to develop their own solution outside of the four presented.

For the participants, I expect they will gain appreciation for the perspectives of the characters they play. I anticipate that by playing these parts, the participants will develop a viewpoint outside their own and begin to challenge their assumptions about the world. This learning will occur during the game itself as well as the debriefing. The debriefing will provide an opportunity for participants to discuss frankly and openly what they learned during the game. In addition, the participants will learn through experience the value of using games as planning and public engagement tools and be open to using games in their future work.

For my research, I expect to test my game design and implementation process. By testing a game designed and implemented under my proposed approach, I will be able to modify and refine my framework. I will also demonstrate to my audience the value of my approach, including an illustration of implementation in a real-world setting. Lastly, in collaboration with the participants, I will evaluate the design of my game, including its structure and details, identifying areas for improvement. This collaboration demonstrates to participants the value and necessity of evaluating and modifying a game's structure.

### Step Four: Develop Structure and Setting of Game

The structure of the game involves the series of events that comprise the event, including the introduction, game, breaks, and debriefing. The setting of the game refers to the event logistics, including where and when the game will be held and any physical or time constraints the game will face.

The Game of Springfield includes a *brief introduction, role selection, a warm-up game, the main event*, and *a debriefing*. First, during the introduction, I will introduce to participants the purpose of the game and general schedule for the session. Next, participants will select their roles. Participants will each draw a series of eight tokens, representing aspects of the characters they will play. These tokens

will contain descriptions of different demographic characteristics, such as whether the player is a homeowner or renter, resident or business owner, immigrant or native-born (see table 3.1 and appendix A). By combining these tokens, participants will have some freedom to emphasize which characteristics are most important to the gameplay.

Table 3.1. Role Characteristics

| ***Category*** | ***Role Choices*** |
|---|---|
| Role in Neighborhood | Homeowner, Renter, Business-owner |
| Origin | Native-born, Foreign-born |
| Family Life | Single, Single with Kids, Married, Married with Kids |
| Location of Residency | Live in Evergreen, Live outside Evergreen |
| Location of Employment | Work in Evergreen, Work outside Evergreen |
| Preferred Transportation Mode | Bicycle, Bus, Drive, Walk |
| Length of Residency | New to Evergreen, Established in Evergreen |
| Age | Young, Middle-aged, Elder |

Third, the participants will play a "party game" as a warm-up. Players will have the chance to develop and understand their characters during the party game, in which they introduce themselves to other players as the characters they are playing and discuss the scenario with each other. Fourth is the main event, during which the participants will act in their roles to decide on the best course of action in the game scenario. Last, I will hold a debriefing to lead the participants in a discussion about their discoveries during the game and their opinions about its use as a planning tool. I will ask a series of open-ended questions, soliciting the feedback of participants about the game, including their opinions about whether this is a useful planning tool. This approach combines debriefing of participants with evaluation and asks the participants to take part in the evaluation, reflecting the participatory action framework of my research. Five examples of questions I may ask during the debriefing:

1. Did you have any discoveries during the game about the character you played?

2. Did your character have a different perspective on the situation than you, as a professional planner, did?
3. Do you think that using games can help you, as a professional planner, better analyze planning situations and decisions? What current or past planning situations might have benefited from using this tool, and why?
4. Do you think that games can be useful for public engagement? What situations might you consider using this tool?
5. What changes might you make to the game process if you were to use this tool in a planning situation?

In terms of the game's *setting*, I will hold the event during four-hour sessions at the University of Washington.

Forester (1999) describes essential components of successful deliberative planning processes, which also apply to games. These include a neutral setting, structured social interaction, interaction on topics of general interest, and participating around superordinate goals. An important part of games is the inclusion of participatory rituals, which are:

> … encounters that enable participants to develop more familiar relationships or to learn about one another before solving the problems they face—for example, the informal drink before negotiations; the meals during focused workshops; the small break-out groups complementing plenary problem-solving sessions; the early story-telling phases of mediation processes, and so on. (Forester 1999, 131–132)

Including a ritual such as a snack break during the course of the game allows for social learning and social capital-building during the game process. In my game, I elected to include a party game to fulfill this purpose. The party game also serves as a warm up, an important part of the role-play that allows participants to become more comfortable and less anxious in their roles (van Ments 1999).

### Step Five: Develop Game Scenario, Problems, Solutions, and Character Roles

At this stage, the planner designs the game scenario, which van Ments (1999) describes as the background story of the role-play. The scenario includes the *problem* faced by participants, *solutions* to that problem, and *character roles*.

In the Game of Springfield, the participants represent a group, invited by Springfield's planning department, convened to discuss four potential solutions to a neighborhood problem and to make a recommendation to the planning director. In this scenario, the city has identified the intersection of Main and Oak Streets as increasingly congested and problematic. An influx of new residents and continued business growth in Evergreen, the neighborhood around this intersection, exacerbates the problem. The city has allocated a sum of money to address this problem in one of four ways:

1. Widen the streets and add more lanes for traffic;
2. Redesign the streets to enhance pedestrian, bicycle, and public transit infrastructure;
3. Provide project grants to local businesses or neighborhood groups; or
4. Hire an outside consulting group to perform a study of the intersection and provide recommended solutions.

The participants' game tokens will indicate their characters' preferences regarding the four solutions. The participants, in their roles, will discuss and debate the four solutions in an attempt to collaborate on a solution. I will act as facilitator, and in the game will play the role of a planner who will bring the group's recommendation to the planning director.

Three types of character roles may be included in the role-play: key roles (the protagonists), subsidiary roles (the supporters of the key roles), and spare roles (extra roles when the number of participants is not clear ahead of time) (van Ments 1999). The planner may also choose to include observer roles, which are useful in rehearsal or educational situations in order to evaluate performance (van Ments 1999), such as rehearsing a public meeting. Group size can vary considerably; the ideal group size balances consideration of including key roles, but not growing so large that players have difficulty participating. My game aims to include between five and 15 participants; between seven and 12 is ideal.

When designing the character roles, the planner should decide whether roles are chosen or assigned and what the role of the planner is (e.g., neutral facilitator, neutral listener) (Gourmelon et

al. 2013). I chose to assign roles randomly; other options include purposefully assigning roles that fit or oppose the players' characters, allowing the group to assign roles among members, or rotating roles during the course of the game (van Ments 1999).

The planner should pay extra attention to writing the role briefs in order to avoid stereotyping or inclusion/exclusion of key roles. Public outreach at this stage may be beneficial in order to ensure inclusion of all key stakeholders as characters in the game (Camargo, Jacobi, and Ducrot 2007) if the game is used as a public engagement exercise. Role briefs include the key features (knowledge, skills, motivations and beliefs, constraints, and power or authority) and intended actions (why the characters are meeting and what their goals are) of each character (van Ments 1999).

At this stage, the planner also considers other design elements of the game, including physical props or graphic images. Props not only add to the fun of gameplay, but also may enhance the game in other ways. For example, the spatial aspect of using a game board stimulates participants to share opinions, interests, and preferences (Gourmelon et al. 2013). In the Game of Springfield, I will use character tokens and maps of the intersection under study as props.

### Step Six: Implement the Game

Two types of activities occur at this stage: *before event* and *during event* activities. The pre-event activities include decisions about the logistics: for example, date, time, and location; advertising; and refreshments. These considerations are similar to any event a planner may hold. In addition, writing a schedule for the day, including times, activities, and resources, will help the facilitator plan the event. See table 3.2 for my game timeline and appendix B for the workshop outline.

In Step Five, the planner established the ideal number of participants in a game group. Should the game attract many more participants than can comfortably fit in one group, there are

three options. One is the "fish-bowl" structure, where a single, smaller group is observed by those not directly participating, which is well suited to games emphasizing learning (van Ments 1999), such as rehearsing a public meeting. However, three of the disadvantages of this structure may preclude its use as a form of public engagement. First, the fish-bowl can over-emphasize the theatrical and artificial aspects of the role-play, which may place the game too far removed from the real world (van Ments 1999), limiting the transferability of learning. Second, relegating the additional participants to observer roles limits active participation (van Ments 1999), though rotation of roles can overcome this disadvantage. Third, participants may feel more performance anxiety and be less willing to engage in the role-play if they feel pressured by being observed.

Table 3.2. Game Timeline

| ***Time*** | ***Activity*** | ***Resources*** |
|---|---|---|
| 1:05-1:15 | Introduction, Consent Forms | Consent forms, pens |
| 1:15-1:45 | Assign Roles, Introduce Scenario | Character tokens, map |
| 1:45-2:15 | Party Game | Snacks |
| 2:15-2:30 | Introduce Proposed Solutions and Purpose | Map |
| 2:30-3:30 | Main Event | Map, pens, paper |
| 3:30-3:45 | Break | Snacks |
| 3:45-4:45 | Debriefing | Pens, paper |
| 4:45-5:00 | Wrap-up and Thank Yous | Pens, paper |

A second structure is the "multiple" approach, where multiple, smaller subgroups play the role-play game simultaneously (van Ments 1999). This structure is useful for public engagement, with each group assigned its own planner-facilitator. The multiple approach allows for two nested debriefings: one at the level of the subgroup, focusing on the learning that took place within each game; and the second in a "report-back" style, focusing on learning across the entire group. Comparing results across groups may provide planners a wealth of information. Another, similar option is running the game at multiple different sessions.

A third structure is the "consultant group" approach, where players meet in groups before the role-play to discuss the background, problems, and possible strategies for the game; the players also have opportunities to consult with each other during the course of the game (van Ments 1999). Planners may find this structure useful in two situations: (1) a long-term public engagement process where working groups are desired or effective; and (2) a rehearsal situation where planners benefit from feedback from their colleagues.

During the gameplay, the facilitator balances multiple responsibilities: choosing and enacting role-play techniques; providing information to participants; reminding and enforcing ground rules; keeping time; re-energizing stalled proceedings; controlling and addressing problems; and avoiding acting as a therapist (van Ments 1999). Individual participants may exhibit problematic behavior during the game, including breaking character, overacting or "burlesquing", losing motivation or "drying up", lacking empathy with the character, boredom, and emotional escalation (van Ments 1999, 128). Effectively addressing these behaviors highly depends on the specific context of the game and its participants, but can include techniques such as stopping and restarting the role-play or intervening within the context of the facilitator's own role in the game (van Ments 1999).

**Step Seven: Evaluate Success of Game and Incorporate "Lessons Learned"**

At this stage, the planner reviews the game planning and implementation with a critical eye, looking at *actual versus expected results, actual versus expected outcomes,* and *participant feedback*. Evaluation occurs twice: once, during the debriefing process with participants; and second, as a post-mortem analysis by the game designer.

Debriefing is one of the most important parts of the game, as it provides participants and the facilitator the opportunity to discuss the process of the game and individual discoveries. This discourse provides a chance for double loop learning (Innes and Booher 2010), transformative

learning (Forester 1999), and collaborative construction/production of knowledge (Healey 1992; Sandercock 2003). The debriefing session should last at least as long as the game, but two to three times the length of the game may be appropriate (van Ments 1999). Debriefing has multiple purposes in planning games, based on the purposes outlined by van Ments (1999, 135), which include:

- Bringing participants out of their character roles;
- Clarifying and agreeing on the facts of what happened;
- Agreeing on corrections of misunderstandings or mistakes;
- Dissipating tension;
- Making explicit any assumptions that occurred during the game;
- Allowing time for participants to make self-observations;
- Comparing actual outcome to original goals;
- Analyzing the reasons for the outcome;
- Reinforcing and building upon individual and group learning;
- Highlighting points for discussion;
- Highlighting areas for improvement in the game;
- Applying lessons learned to other situations; and
- Developing a plan for next steps.

By structuring the debriefing in three phases—establishing what happened, why it happened, and what to do next (van Ments 1999)—the planner can address these purposes in a logical manner. Discussing areas of improvement in the game with participants allows the planner to incorporate their feedback in the evaluation process.

The second round of evaluation occurs after the conclusion of the game. This post-mortem analysis compares the goals and outcomes designated at the beginning of the game to the actual results. *What actually happened during the game, and why?* By reflecting on the observations of both the participants and the facilitator, the planner identifies strengths, weaknesses, and areas for improvement. Applying these "lessons learned" will help improve the game for future implementation.

## Summary

I have developed a seven-step process for designing and implementing role-playing simulation games in the planning process:

1. Identify planning situation
2. Identify purpose and audience of planning game
3. Identify goals and desired or expected outcomes of game
4. Develop structure of game
5. Develop scenario, problems, solutions, and character roles
6. Implement the game
7. Evaluate success of game and incorporate "lessons learned"

By following these steps, a planner can implement games as decision-making, rehearsal, or public engagement tools. I will use the game I designed to test this seven-step approach, engaging a group of Seattle-area planners as participants.

# Chapter 4: Results

I held two test sessions of my game on May 18 and 19, 2014, in a classroom of Gould Hall at the University of Washington. Seven people participated, four during Session 1 and three during Session 2. This chapter summarizes the results of the two sessions, including a narrative of each session's events and participants' comments during each debriefing. I recorded these observations and comments using the observation worksheets in appendix C.

## Session 1 Results

I held Session 1 on Sunday, May 18, 2014, from 1:15 to 3:15 p.m. This session included four participants: three male students and one female planner, who chose the fictional names of Ralph, Christian, John, and Lisa (see table 4.1).

### Introduction and Role Selection

After obtaining informed consent, I began the session with a brief introduction, describing the format and schedule of the workshop. Next, I assigned roles through the random selection of tokens. I passed around a bag of six tokens and instructed each participant to draw one token from the bag; I repeated this for each role category for a total of eight tokens per participant. See table 4.2 for the tokens selected by each participant. Table 4.3 shows the number of tokens available for each characteristic ("Number of Tokens Available [of 6]") and the proportion of each characteristic in each category ("Number of Tokens Available [Percent in Bag]"). Table 4.3 also shows the actual tokens selected by players ("Number of Tokens Selected [of 4]") and the proportion of each

characteristic among game players ("Number of Tokens Selected [Percent of Group]"). This table enumerates the differences between the tokens available in the game and the actual tokens selected by players. In some categories, certain characteristics were not selected by any players (e.g., prefer to drive).

I then distributed copies of the icon key (see appendix A), so players could see what the icons on their tokens indicated and what other tokens were in play. This portion of the workshop lasted approximately 10 minutes.

Table 4.1. Session 1 Participants

| ***Subject Identifier*** | ***Subject Description*** | ***Character Name (Fictitious)*** |
|---|---|---|
| A | Female planner | Lisa |
| B | Male student | Ralph |
| C | Male student | Christian |
| D | Male student | John |
| Facilitator | Researcher | Monica |

Table 4.2. Session 1 Roles

| ***Subject Identifier and Name*** | ***Roles Selected*** |
|---|---|
| A / Lisa | Homeowner, Native-born, Single, Live outside Evergreen, Work in Evergreen, Prefer Bus, Established in Evergreen, Young |
| B / Ralph | Renter, Native-born, Married, Live in Evergreen, Work outside Evergreen, Prefer Bus, New to Evergreen, Elder |
| C / Christian | Homeowner, Foreign-born, Single with Kids, Live in Evergreen, Work in Evergreen, Prefer to Bicycle, New to Evergreen, Young |
| D / John | Business-owner, Foreign-born, Married with Kids, Live outside Evergreen, Work outside Evergreen, Prefer to Walk, New to Evergreen, Elder |

Table 4.3. Session 1 Tokens Available and Selected

| ***Category*** | ***Role Choice*** | ***Number of Tokens Available*** | | ***Number of Tokens Selected*** | |
|---|---|---|---|---|---|
| | | *(of 6)* | *(Percent in Bag)* | *(of 4)* | *(Percent of Group)* |
| Role in Neighborhood | Homeowner | 2 | 33% | 2 | 50% |
| | Renter | 2 | 33% | 1 | 25% |
| | Business-owner | 2 | 33% | 1 | 25% |
| Origin | Native-born | 3 | 50% | 2 | 50% |
| | Foreign-born | 3 | 50% | 2 | 50% |
| Family Life | Single | 2 | 33% | 1 | 25% |
| | Single with Kids | 2 | 33% | 1 | 25% |
| | Married | 1 | 17% | 1 | 25% |
| | Married with Kids | 1 | 17% | 1 | 25% |
| Location of Residency | Live in Evergreen | 4 | 67% | 2 | 50% |
| | Live outside Evergreen | 2 | 33% | 2 | 50% |
| Location of Employment | Work in Evergreen | 3 | 50% | 2 | 50% |
| | Work outside Evergreen | 3 | 50% | 2 | 50% |
| Preferred Transportation Mode | Bicycle | 1 | 17% | 1 | 25% |
| | Bus | 2 | 33% | 2 | 50% |
| | Car | 2 | 33% | 0 | 0% |
| | Walk | 1 | 17% | 1 | 25% |
| Length of Residency | New to Evergreen | 3 | 50% | 1 | 25% |
| | Established in Evergreen | 3 | 50% | 3 | 75% |
| Age | Young | 2 | 33% | 2 | 50% |
| | Middle-aged | 2 | 33% | 0 | 0% |
| | Elder | 2 | 33% | 2 | 50% |

*Note:* Some percentages do not sum to 100 due to rounding.

**Party Game**

Next, the participants played the party game. Each player introduced himself to the other players in character, one-on-one, as directed. Due to the small size of the group, two groups of two formed. The classroom's acoustics and the small size of the group meant that each pair easily overheard the other pair's conversation. Ralph, Christian, and John knew each other outside of the group and easily started conversation with each other. Lisa hung back a bit and waited to be engaged in

conversation. All four participants engaged more in the game after the first round of conversation, and engaged in conversation individually with all other participants. None of the players "broke frame" to ask for feedback about their character at this stage, though I gave them permission to do so when I described the structure of the party game.

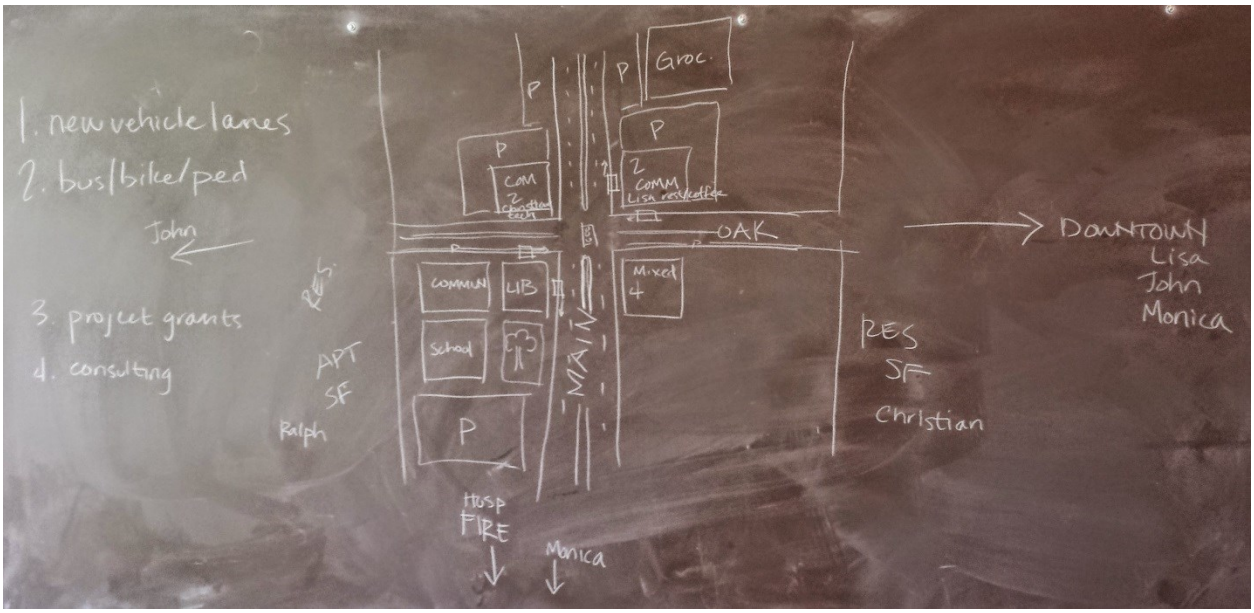



Figure 4.1. Map created for Session 1, showing locations of the commercial core, residential areas, on- and off-street parking, and community services (community center, school, library, and park).

After approximately 10 minutes, the participants requested more information about the neighborhood and intersection. I drew a map of the Main and Oak Streets intersection on the chalkboard (see fig. 4.1). While I had designed the basic layout of the intersection prior to the game, I improvised the details as players asked questions. Main Street, a four-lane, divided arterial, ran north/south. Oak Street, a two-lane arterial with on-street parking on both sides, ran east/west. A traffic light controlled the Main/Oak intersection. Other features included two-story commercial buildings on the northwest and northeast corners with off-street parking; a community center,

school, library, and park on the southwest corner; and a new four-story, mixed-use building on the southeast corner. Residential areas of Evergreen were to the east and west of the intersection; the western area included both single-family homes and apartment buildings, while the eastern area included only single-family homes. Each player volunteered the location of his home and office without prompting; I included these locations on the map. The party game concluded after approximately 20 minutes, including the 10-minute interactive session designing the map.

### Main Event

Next, I introduced the four solutions under consideration, providing a brief, one- to two-sentence description of each. I handed out copies of the game board (see appendix A), which showed players' preferences for the four solutions based on their role in the community, length of residency, and age. I asked each player to describe which solutions he preferred, which he did not like, and his reasoning. All four players supported the second option initially, with some support for the third and fourth options. One player initially stated some support for the first option and two players opposed it. Conversation between players began to flow without my prompting after they stated their initial preferences.

Agreement emerged quickly, so I introduced the possibility of combining solutions instead of just choosing one for recommendation. I suggested the group could create a project priority list or allocate percentages of the budget toward different options. Players asked me (as the city representative) for additional details about the proposed solutions and about technical aspects (e.g., bus service frequency, traffic counts) as their discussion unfolded. Lisa and Christian dominated the discussion, while Ralph did not participate as much. All participants used planning language and knowledge, tending toward proposing specific forms of infrastructure upgrades (e.g., a cycle track along Main Street).

The final recommendation from the group was to allocate approximately half of the budget toward hiring consultants to do technical analysis for pedestrian, bicycle, and bus improvements, with a focus on reducing conflict between all modes of transportation (including cars). The group requested the consultants focus on a solution in the realm of the second option. In addition, players expressed a preference for a variable lane on Oak Street, which would be dedicated to moving traffic instead of parking in the direction of rush-hour traffic (east in the morning, west in the evening). During off-peak times, this variable lane would allow parking. Of the second half of the budget, the group chose to allocate approximately 30 percent specifically for option 2 and 20 percent for option 3. Lisa proposed that the project grants could be used for art at the bus shelters. The group emphasized that some money from the budget be held for design and construction after the consultant's work finished. This portion of the workshop lasted approximately one hour.

Next, I gave participants a 10-minute break, with snacks provided. All four interacted with each other during the break, making small talk and showing interest particularly in Lisa's experience as a professional planner.

## Debriefing

The last portion of the workshop was the debriefing. I requested feedback about the specifics of the game, the participants' experiences, and their opinions about the utility of games in planning. This portion of the workshop lasted approximately 30 minutes.

### *Design and Structure of the Game*

Several participants suggested that more direction in their character roles would be helpful. Lisa suggested including a token for personality type that reflected the "frequent flyers" in public hearings (e.g., grouchy or complaining). Similarly, participants noted that having an identity or

"issues" token (e.g., environmentalist) might be helpful in directing their characters. John noted that selecting both the "live outside Evergreen" and "work outside Evergreen" tokens made it difficult for him to relate to the game and find a plausible reason for participating.

All four participants gave positive feedback about the design and utility of the tokens. Lisa noted that the icons can unintentionally portray loaded assumptions, such as the use of a house for "homeowner" when many people own condos. The participants agreed that the game board needed improvement as well; while the intention of expressing preferences was clear, relating those preferences to their own characters was difficult. Participants suggested instead showing with the tokens which one characteristic was most important. All four participants also agreed that having a map at the beginning of the game would have been helpful to both grasp the scenario and develop their characters.

The participants noted that it was difficult to ignore their planning knowledge and experience. They stated that including only planners as participants seemed to bias the game in favor of better planning outcomes—adding bike or bus infrastructure as a viable alternative to increasing vehicle capacity, for example. John suggested asking a series of small questions at the beginning of the workshop in order to help participants develop their roles and better separate themselves from the mindset of planners.

Ralph noted that most games have a system of rewards and consequences, which this game lacks. He cited resource management games, which have an exchange component, as an example of a rewards/consequences structure in games.

### *Relationship to Planning*

Participants noted that games could be used in small groups or small neighborhood meeting settings. Ralph noted that the setup of games is beneficial for focusing discussion and for steering

participants away from hot button issues. Participants mentioned that a game is a good way to balance education and outreach in a planning setting. Ralph stated that games reduce the ambiguity of hypothetical situations, making the concepts more tangible to participants. Participants noted that games also simplify the issues addressed, encouraging participants' comprehension and learning.

## Session 2 Results

I held Session 2 on Monday, May 19, 2014, from 1:00 to 3:30 p.m. This session included three participants, all female planners, who chose the fictional names of Elena, Daniella, and Marta (see table 4.4). I adjusted some aspects of the game based on my experience and participants' feedback during Session 1, but endeavored to maintain the same basic structure of the game.

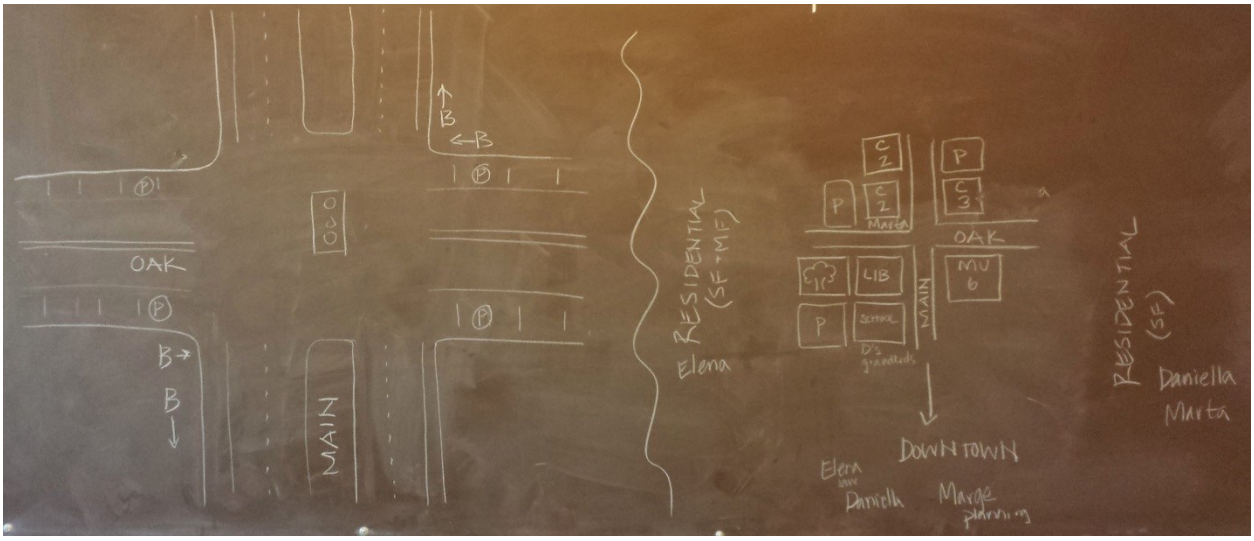



Figure 4.2. Maps created for Session 2, showing locations of on-street parking, lanes, medians, traffic light, and bus stops (left); and commercial core, residential areas, off-street parking, and community services (park, library, and school) (right).

Before participants arrived, I drew two maps on the chalkboard, showing the intersection's layout and surroundings (see fig. 4.2). Main Street, again a four-lane, divided arterial, ran north/south, with shoulders used as informal bicycle lanes. Oak Street, again a two-lane arterial with on-street parking on both sides, ran east/west. A traffic light controlled this intersection. Other features included two-story commercial buildings on the northwest corner with off-street parking; a three-story commercial building on the northeast corner with off-street parking; a park, library, school, and off-street parking on the southwest corner; and a new, six-story, mixed-use building on the southeast corner. Residential areas of Evergreen again were to the east and west of the intersection; the western area included both single- and multi-family homes, while the more established eastern area included only single-family homes.

### Introduction and Role Selection

After obtaining informed consent, I began the session with a brief introduction, describing the format and schedule of the workshop. I then assigned roles through random selection of tokens, using the same method as Session 1. Knowing that I would have fewer than six participants, I removed two tokens from each category. See table 4.5 for the tokens selected by each participant. Table 4.6 shows the number of tokens available for each characteristic ("Number of Tokens Available [of 4]") and the proportion of each characteristic in each category ("Number of Tokens Available [Percent in Bag]"). Table 4.6 also shows the actual tokens selected by players ("Number of Tokens Selected [of 3]") and the proportion of each characteristic among game players ("Number of Tokens Selected [Percent of Group]"). This table records the differences between the tokens available in the game and the actual tokens selected by players. In some categories, certain characteristics were not selected by any players (e.g., prefer to walk).

I distributed copies of the icon key (see appendix A) for players' reference. This portion of the workshop lasted approximately 10 minutes.

**Party Game**

Next, the participants played the party game. Due to the small size of the group, I chose roundtable introductions rather than the format I used for Session 1. I suggested that each participant include in her introduction how long she has lived or worked in Evergreen, why she chose to live or work there, and what she does for a living. Elena and Marta, both of whom were foreign-born, included in their stories their countries of origin. Because of the roundtable format, I did not include a suggestion to "break frame" in order to provide or request feedback on character development. After each player introduced herself, I asked participants to indicate where on the map they lived and worked. This portion of the workshop lasted approximately 15 minutes.

Table 4.4. Session 2 Participants

| ***Subject Identifier*** | ***Subject Description*** | ***Character Name (Fictitious)*** |
|---|---|---|
| E | Female planner | Elena |
| F | Female planner | Daniella |
| G | Female planner | Marta |
| Facilitator | Researcher | Marge |

Table 4.5. Session 2 Roles

| ***Subject Identifier and Name*** | ***Roles Selected*** |
|---|---|
| E / Elena | Business-owner, Foreign-born, Married with Kids, Prefer to Drive, Live in Evergreen, Work in Evergreen, New to Evergreen, Middle-aged |
| F / Daniella | Homeowner, Native-born, Single with Kids, Prefer to Bicycle, Live in Evergreen, Work outside Evergreen, Established in Evergreen, Elder |
| G / Marta | Renter, Foreign-born, Married, Prefer Bus, Live in Evergreen, Work in Evergreen, Established in Evergreen, Middle-aged |

Table 4.6. Session 2 Tokens Available and Selected

| ***Category*** | ***Role Choice*** | ***Number of Tokens Available*** | | ***Number of Tokens Selected*** | |
|---|---|---|---|---|---|
| | | *(of 4)* | *(Percent in Bag)* | *(of 3)* | *(Percent of Group)* |
| Role in Neighborhood | Homeowner | 1 | 25% | 1 | 33% |
| | Renter | 2 | 50% | 1 | 33% |
| | Business-owner | 1 | 25% | 1 | 33% |
| Origin | Native-born | 2 | 50% | 1 | 33% |
| | Foreign-born | 2 | 50% | 2 | 67% |
| Family Life | Single | 1 | 25% | 0 | 0% |
| | Single with Kids | 1 | 25% | 1 | 33% |
| | Married | 1 | 25% | 1 | 33% |
| | Married with Kids | 1 | 25% | 1 | 33% |
| Location of Residency | Live in Evergreen | 3 | 75% | 3 | 100% |
| | Live outside Evergreen | 1 | 25% | 0 | 0% |
| Location of Employment | Work in Evergreen | 2 | 50% | 2 | 67% |
| | Work outside Evergreen | 2 | 50% | 1 | 33% |
| Preferred Transportation Mode | Bicycle | 1 | 25% | 1 | 33% |
| | Bus | 1 | 25% | 1 | 33% |
| | Car | 1 | 25% | 1 | 33% |
| | Walk | 1 | 25% | 0 | 0% |
| Length of Residency | New to Evergreen | 2 | 50% | 1 | 33% |
| | Established in Evergreen | 2 | 50% | 2 | 67% |
| Age | Young | 1 | 25% | 0 | 0% |
| | Middle-aged | 2 | 50% | 2 | 67% |
| | Elder | 1 | 25% | 1 | 33% |

*Note:* Some percentages do not sum to 100 due to rounding.

**Main Event**

As I did in Session 1, after the party game concluded, I introduced the four solutions under consideration. I included longer descriptions of each solution under consideration:

1. New vehicle lanes: to include removal of the median on Main Street in order to accommodate additional travel lanes, with the potential for removing on-street parking on one or both sides of Oak Street.

2. Pedestrian, bicycle, and bus infrastructure upgrades: to include new bicycle lanes or a cycle track, widened sidewalks and curb bulbs at the intersection, and new bus shelters.
3. Project grants: for business or neighborhood groups for projects of their creation.
4. Consultants: to conduct a feasibility study of the intersection and make recommendations for improvements.

After describing each solution, I handed out copies of the game board (see appendix A), describing it as the results of preliminary polling data about the solutions under consideration. I noted that participants' own views may differ, but the game board showed what certain residency and age demographics tended to prefer.

Next, I asked each participant to state which solution she preferred, which she would not accept, and her reasoning for those choices. Two participants immediately indicated their support for the second option, one of whom also liked some features of the first option. The third participant supported the fourth option. One participant opposed both the third and fourth options. After stating their preferences, the players proceeded to ask me (as the city representative) a series of detailed questions about the intersection, the solutions, and the larger neighborhood, city, and regional context. Elena then clarified with me that their charge was to convince each other which solution was best and come to mutual agreement. After this clarification, discussion flowed between players with less prompting from me.

As discussion proceeded, some agreement emerged around the consultant option. When asked, I clarified that the participants could recommend a hybrid option and include a project prioritization list or approximate percentages of allocation for the budget. After some discussion, participants agreed that consultants should be hired for a limited scope of work (approximately 20 percent of the budget), to focus on improving traffic flow, making a mix of mode improvements (bicycle and bus, plus limited vehicle or turn lanes, but not pedestrian), and ensuring safety for children attending the neighborhood school. The consultants should also perform detailed technical

analysis, including traffic counts and a mode shift survey. Daniella suggested that some of the remaining budget be allocated to a community outreach program that would work with the neighborhood to develop potential projects, rather than the open call for project proposals envisioned under the grant option. Participants asked that the remainder of the budget be reserved for design and construction services. Additionally, the players identified two priorities for any intersection projects: keeping at least some of the median and retaining neighborhood character.

Similar to Session 1, all three participants relied on their planning knowledge for discussion. All three players contributed equally to the discussion, though Daniella and Elena tended to speak at length when expressing their views. Unlike Session 1, the players pressed me until I gave detailed information about the budget, technical aspects of the intersection, and the planning and policy framework for the city. This portion of the workshop lasted approximately one hour.

Next, I gave the players a 15-minute break with snacks provided. As all three participants knew each other directly or through their professional contacts, they interacted during the break.

## Debriefing

The last portion of the workshop was the debriefing. I requested feedback about the specifics of the game, the participants' experiences, and their opinions about the utility of games in planning. This portion of the workshop lasted approximately 50 minutes.

### *Design and Structure of the Game*

All three participants had feedback about the structure of the roles. Marta noted her role was too similar to her real life, so she found it difficult to separate her professional self from her role in the game. She suggested that a little more conflict in the game would have helped her solidify her character. Daniella noted that when she uses role-playing games in educational settings, she typically

writes character vignettes. She thought more detail in the roles would be helpful. Elena found she fell back on her planning experience and knowledge to fill in the gaps of her role, since improvising details on the fly was difficult. Daniella suggested that some time to write out her character's story would have helped her solidify her role. Marta noted that a team approach to developing the characters, where two players worked together on the same role, could be another way to fill out the story.

Daniella felt the scenario, as presented, was constraining. I presented the problem as one of transportation, while, to her, the issue seemed to be growth. Elena felt that the prescribed nature of the scenario made it easy for her to convince others of the need for consultants, since technical information was lacking. She suggested a different scenario where players had strong opinions to generate debate, such as what to do with a park, might be better for a game. Elena also noted that a clearly defined endpoint, with an explicit timeline and goals (including the expected amount of consensus) would be beneficial. Daniella proposed another approach for the scenario, with the goal of proposing a policy for resolving a problem rather than a technical fix. Elena observed that the premise of using the same budget allocation for one of any four projects is unrealistic. She proposed a "menu of options" approach, with each option costing a set amount of money and a total budget to spend. Daniella proposed including a set of policy parameters from the city or regional government level that would constrain the scenario and produce conflict.

### *Relationship to Planning*

All three participants unanimously agreed that games are useful to planning. Both Elena and Daniella have used role-playing games in planning education. Elena suggested that such games would be useful for new planning commissioners, as a way to rehearse public meetings. Marta agreed that games are a useful teaching tool for educating planners or policy-makers about specific

issues. She noted that games are a good exercise in considering the larger picture and forging bonds between staff members of planning or public works departments. Daniella believed a game that provided a planner the chance to role-play a nemesis character (e.g., the anti-growth or protectionist character) would help her develop empathy for that character as she worked to find a rationale for an argument opposing her own viewpoint.

When prompted, the participants gave specific examples from their own professional experience of when games would be useful. Daniella mentioned that she has used role-play in workshop settings in order to voice views not held by any of the participants. Elena agreed, noting that planners often encounter situations where all the participants represent a homogenized viewpoint, but are not representative of the community. By assigning roles in this situation, more views can be voiced and considered in the planning process. Daniella added that the empathy developed through taking on another viewpoint would have a long-term effect on an individual level, carrying over throughout the planning process such that the individual would consider the alternate viewpoint alongside her own. She hypothesized that role-play thus becomes a way to consider the needs of other users of a space.

Marta suggested games would be useful when preparing planners for a public process, such that they could anticipate the public's reactions and rehearse responses. Daniella believed that playacting the roles of others in the community allows participants to gain empathy for those ignored or dismissed. The participants mentioned neighborhood planning, stakeholder or advisory groups, or smaller focus groups as good settings for planning games. Daniella noted that games with participants who feel responsible for making a good decision as representatives of their community might have better results.

## Summary

I played the Game of Springfield during two test sessions on May 19 and 20, 2014. Session 1 lasted approximately two hours, while Session 2 lasted approximately two hours and 30 minutes. Session 1 had four participants: three students and one planner. Session 2 had three participants, all of whom are planners. I followed the same basic structure and design for both sessions, but made a few modifications to Session 2 based on feedback I received during Session 1. The changes I made to Session 2 included drawing the scenario maps before the participants arrived, facilitating roundtable rather than one-on-one introductions, and providing more details about the proposed solutions.

Both sessions did result in agreement, and both groups chose the consultant option as the priority, though the budget allocation differed (50 percent for Session 1 versus 20 percent for Session 2). Both groups prioritized improvements to bus and bicycle infrastructure rather than simply adding more vehicle capacity. Group 1 chose to include funding for project grants. Group 2 proposed that some of the budget be reserved for an outreach effort to engage citizens in designing projects.

Both groups provided feedback about both the structure of the game and the applicability of games to planning. Both groups suggested including additional details about the roles to assist with character development, citing examples such as using role vignettes rather than tokens, adding personality types or traits, adding issue tokens, and indicating which characteristic was most important or associated with the character's identity. Several participants recommended allowing more time for character development, either individually or in teams. Participants also noted that more conflict would have improved the game and elicited more debate and discussion; both groups easily achieved consensus without much disagreement. Some players acknowledged they had difficulty separating their planning knowledge from their characters. Session 2 participants

recommended including more details about the scenario, solution outcomes, and workshop timeline and goals.

Both groups made quick connections between games and the planning process. Players identified small neighborhood meetings, planning commissioner training, policy training, neighborhood planning, stakeholder or advisory groups, and focus groups as potential applications for games. Participants remarked that role-playing encourages empathy with opposing viewpoints, which is useful for both planners and the public. Players also related their experiences using role-play in order to represent voices not present in planning settings.

# Chapter 5: Discussion

This chapter analyzes and reviews the results of my study in two areas: the game itself and the design and implementation framework. I discuss revisions to the game's design, including the scenario, solutions, roles, party game, and props. I examine and modify the game design and implementation framework developed in chapter 3 based on the test results.

## The Game of Springfield

Much of the feedback from participants about the game itself focused on the roles and scenario. Several participants noted their difficulty constructing characters and suggested more detailed role assignments or more conflict built into the game. This points to two interrelated issues with the game: insufficient time for character development and a small group of participants.

### Roles

The primary advantage to using random selection of tokens to assign roles, rather than static vignettes, is avoidance of stereotyping, a problem identified by Sandercock (2003). Another way to overcome stereotyping is by developing roles through public outreach (Camargo, Jacobi, and Ducrot 2007), or, as in this case, by working with an advisory group of practicing planners. Time constraints eliminated the practical possibility of this approach. In addition, random token selection adds to the sense of gameplay, important for a less formal, less tense, and more relaxed game atmosphere (Camargo, Jacobi, and Ducrot 2007). All participants responded positively to the tokens, and the

early and interactive activity stimulated conversation. Therefore, this approach to assigning roles is valuable.

Modifying some aspects of the workshop may address the character development issues. The party game is an effective way to develop characters through collaborative knowledge construction. However, the small sizes of the groups in my study limited its effectiveness. In Session 1, each pair of participants overheard the other pair's conversation. A larger group with more "buzz" of conversation will experience less distraction, allowing conversation to flow naturally. Also, four people is a small enough group that breaking into subgroups seemed superfluous. Because Session 2 had three participants, I elected to use roundtable introductions rather than the party game. This choice resulted in a detrimental loss of the informality of the party game, especially since the participants remained seated at the table. Participants instead remained oriented to the hierarchy of facilitator and citizens. The facilitator fell prey to the power and authority imbalance noted by van Ments (1999), remaining in the role of the expert, rather than dissolving the researcher/participant hierarchy in the framework of participatory action research.

A better approach for a small group includes additional time for individuals to work on their characters, perhaps by writing their stories (as Session 2 participant Daniella suggested) or by answering targeted questions from the facilitator and other players. Writing stories will work for groups with good English language skills, but may alienate non-native English speakers or those participants who otherwise have physical or expressive difficulties. The planner should carefully consider these potential negative consequences to employing writing as a significant game activity. Offering drawing as an alternate option may overcome some of these difficulties. The planner should emphasize that the intent of the writing or drawing activities is to help the participant; the results do not necessarily need to be shared directly with other players. Answering targeted questions from the facilitator and other participants has the advantage of contributing to collaboratively

constructed knowledge through dialogue (Healey 1992). The clear disadvantage is the perception of facilitator as authority figure. One or both of these approaches may be appropriate in situations where the planner expects the participants will respond positively to these techniques or in small groups (five or fewer participants).

In future uses of the Game of Springfield, I will include additional time for character development prior to the party game. That way, when players introduce themselves to each other in character, they have had time to become familiar with their roles. Having developed a basic role as a foundation may also encourage players to "break frame" in order to provide or solicit feedback about their character narratives. This is similar to the use of "consultant groups" to discuss background, problems, and strategies before engaging in the role-play (van Ments 1999). Instead of focusing on improvising details in the moment, players have a stronger story foundation and can focus on their conversations with other players. The party game works better for larger groups: players can practice introducing themselves several times, they can solicit feedback from multiple characters, and they can avoid the performance anxiety that may arise if they feel watched. In smaller groups, physically moving into a different space for the roundtable-style introductions and providing more targeted instructions (e.g., "tell us about where you live, work, and play," "ask other participants what they think about an issue you care about") encourages less formal interactions that still accomplish the party game's objectives.

### Scenario

Participants noted that the scenario was both too open and too constrained. The solutions I presented needed more detail, including the expected outcomes under each option. Session 2's Daniella commented that I presented the scenario as a traffic problem, but growth seemed to be the larger concern. Other participants, during the main event and the debriefing, requested more clarity

about Springfield's policy framework. This feedback points to the need for more clarity and specificity in the scenario and its goals.

While designing the Game of Springfield, I developed two sets of goals (see chapter 3). One goal was to provide answers to my four research questions. The second goal was to demonstrate to a small group of professional planners in the Seattle area the utility and effectiveness of games as decision-making, rehearsal, and public engagement tools. These goals do not dictate specific details for the design of the scenario. If, for example, my goal was to develop new policy solutions for growth management, a different scenario would be appropriate than if my goal was to evaluate transportation alternatives for a neighborhood. Because I oriented my goals to the broader needs of the planning profession, I designed a broader game. Selecting goals that are more specific will narrowly define the game's circumstances, giving more clarity to the scenario and its solutions. In future iterations of the Game of Springfield, I will select a narrower topic as the problem under consideration in order to provide more constraints on the game.

Indeed, the constraints of the scenario act as some of the rules of the game. The rules of a game govern player behavior and avoid chaos (Liberman 2013). Perhaps more importantly, rules provide players:

> … a field of regularized options to engage their ingenuity and creative thinking. As their wits are challenged, the play becomes entertaining, and "The game is afoot." This is an important feature, one that *identifies a successful game-with-rules*. (Liberman 2013, 130, emphasis in original)

The Game of Springfield is a free-form, rather than rigid-form game; its rules do not tightly constrain or prescribe players' actions (Mayer 2009). The rules are no less important, however; the planner needs to pay as much attention to designing the constraints of the game as she does to developing the scenario. With a carefully selected set of rules/constraints—for both the scenario and solutions, and determined by the goals of the game—players have the freedom to experiment

and improvise. This adds to the less formal, less tense, and more relaxed game atmosphere described by Camargo, Jacobi, and Ducrot (2007). This playful atmosphere is particularly important for games that address wicked problems, since such problems often need creative solutions that benefit a range of stakeholders.

### Conflict

Several participants noted that coming to agreement was too easy; they desired more conflict built into the game's structure. They reasoned that more conflict would elicit more debate, which they perceived would add to the fun of the game. Beyond mere enjoyment, however, more conflict would better reflect the contentious situations planners face. This points to the need to both portray and ensure conflict in a planning game, accomplished through the design of the roles and scenario.

I designed the Game of Springfield for group of approximately seven to 12 people (two to three times larger than the actual test groups). Larger groups likely will experience more conflict than did my test groups. By selecting a series of tokens to represent players' roles, the players would share some characteristics and differ on others, presumably allowing for some pluralism and consensus-building opportunities. This is both less likely and less necessary in a small group. Additionally, the possibilities for consensus-building depend on the individual players' abilities to develop their roles, which participants in both sessions identified as problematic.

Three options are available to increase conflict through role design: adding issue tokens, adding membership tokens, or prioritizing a particular characteristic as most important to the character's viewpoint. Issue tokens could include concerns such as the natural environment, historic preservation, or social justice. Including issue tokens ensures the game includes concerns known to be at stake. However, including these issues without consulting with an advisory or citizen group risks overlooking issues important to the community. Thus, using public input to design the issue

tokens will help represent more equitably the neighborhood's concerns. Membership tokens are another option, and could include environmental groups, chambers of commerce, or neighborhood councils. Similar to issue tokens, developing membership tokens in consultation with the community will help ensure inclusive representation of the community's concerns. A third option is to designate a particular characteristic as the most important to a character's identity. The planner can elect to do this herself before the game starts or can direct each player to choose for herself during character development.

As for the scenario, including more specifics about the problem, solutions, and outcomes can elicit more debate. A narrower definition of the problem and constraints (rules) gives the players specific points on which to disagree. The planner can build in these points of disagreement to the game's design by including competing motives, emotions, perceptions, and goals; as well as competition or scarce resources (van Ments 1999). The Game of Springfield, for example, could include scarcity of funding for projects as a mechanism for conflict. Including more detail gives participants concrete ways to disagree, thus stimulating discussion. However, if the situation seems impossible to solve, participants may disengage and become frustrated, a risk of role-play identified by Sandercock (2003). The planner must strike a balance such that the problem is contentious but not intractable.

### Game Revisions

Based on my observations and experience playing the Game of Springfield, and the feedback provided by participants during the debriefing sessions, I propose several changes to the game's design and implementation. These include changes to the scenario, solutions, roles, and party game, as well as inclusion of additional props.

*Scenario and Solution Revisions*

First, I will keep the basic premise of the scenario: an increasingly congested intersection in the Evergreen neighborhood. However, I will deemphasize the growth issues and instead focus on the design solutions. I will present a menu of design elements, to include:

- Vehicle travel lanes
- Variable travel lanes (allocated by time of day)
- Separated bicycle lanes
- Bicycle track
- Widened sidewalks
- Bus shelters
- Dedicated bus lanes
- Wider crosswalks
- Curb bulbs
- Traffic light programming changes

Each element will have a monetary cost assigned to it, proportionally reflective of real-life construction costs but not priced in real dollars (e.g., each new bicycle lane would cost $5, but a new cycle track would cost $15). The group will have a total budget that they can allocate between options as they choose. Some elements will have additional, non-monetary costs, such as the removal of an on-street parking lane for a new vehicle lane or new bicycle lane. Together, these costs reflect the real-world financial and spatial tradeoffs.

I will give the players a starting point for their discussion by presenting three solution packages:

1. Vehicle improvements: add new vehicle lanes on Main Street by removing median and reducing shoulders; add new variable travel lanes on Oak Street by combining with on-street parking; dedicate left-turn lanes in four directions; and reprogram traffic lights as split-cycle.
2. Bus improvements: add dedicated bus lanes on Main Street by removing median and reducing shoulders; add new variable bus lanes on Oak Street by combining with on-street parking; add new bus shelters; and reprogram traffic lights as split-cycle.

3. Bicycle and pedestrian improvements: add bicycle track in center of Main Street median; add bicycle lanes on Oak Street by removing on-street parking on one side; add curb bulbs on Oak Street; pave intersection in contrasting material; and reprogram traffic lights for longer pedestrian crossing time and pedestrian scramble cycle.

I will instruct players to select one of these packages or design their own based on a total budget. This approach to scenario design—providing a menu of options with financial and spatial costs—is one method planners may find useful for incorporating the public into the budget process (participatory budgeting); this method meets the goals of providing accountability and increasing citizen interest in budgeting as described by Rubin (1996).

### *Role and Party Game Revisions*

Second, to support the revised scenario, I will revise some aspects of the roles and party game. I will keep the same method of role selection through random drawing of tokens. However, I will revise the roles by removing the location of residency and location of employment categories, which seemed less important to identities in the test groups. I will add an employment category in order to give each player more information about her identity, since a person's profession is one of the roles she uses to construct her identity (Price, Friedland, and Vinokur 1998). The employment role choices include developer, environmental activist, schoolteacher, delivery driver, barista, community center director, doctor, unemployed, and student. These choices represent a mix of income brackets and issues of concern relevant to the scenario's problem. In addition, I will replace business-owner with condo-owner in the role in neighborhood category for two reasons: to reduce potential conflicts between the role in neighborhood and employment categories, and to reflect the differing concerns between single-family homeowners and condominium owners. See table 5.1 for the revised categories and roles.

Reflecting the concerns of several participants in my test groups, I will include more time for players to develop their roles. After token selection, I will give participants five minutes to write or draw their characters' stories. Next, they will play the party game, with specific instructions to use their conversations with other players in order to refine further their characters.

Table 5.1. Revised Role Characteristics

| ***Category*** | ***Role Choices*** |
|---|---|
| Role in Neighborhood | Homeowner, Renter, ~~Business-owner~~, Condo-owner* |
| Origin | Native-born, Foreign-born |
| Family Life | Single, Single with Kids, Married, Married with Kids |
| ~~Location of Residency~~ | ~~Live in Evergreen, Live outside Evergreen~~ |
| ~~Location of Employment~~ | ~~Work in Evergreen, Work outside Evergreen~~ |
| Preferred Transportation Mode | Bicycle, Bus, Drive, Walk |
| Length of Residency | New to Evergreen, Established in Evergreen |
| Age | Young, Middle-aged, Elder |
| Employment* | Developer, Environmental Activist, Schoolteacher, Delivery Driver, Barista, Community Center Director, Doctor, Unemployed, Student |

*Note:* ~~strikethrough~~ indicates removed category or role choice; * indicates new category or role choice.

*Props*

Third, to enhance gameplay, I will introduce a few additional props. Props add to the fun of gameplay, and the spatial aspect of using game boards stimulates discussion around opinions, interests, and preferences (Gourmelon et al. 2013). I will include a map of Springfield, of Evergreen, and of the Main and Oak Streets intersection. This will allow participants to visualize their city and neighborhood, providing the opportunity to indicate and discuss where they live and work. I will also include sketches of the three solution packages, giving players visual cues about the impacts of different solution choices. Last, I will include chips representing options from the menu of design elements, which players can buy with game money. The game is over when the players have spent their budget or the allotted time has elapsed.

## Game Design and Implementation Framework

The game design and implementation framework I outlined in chapter 3 includes seven steps:

1. Identify planning situation
2. Identify purpose and audience of planning game
3. Identify goals and desired or expected outcomes of game
4. Develop structure of game
5. Develop scenario, problems, solutions, and character roles
6. Implement the game
7. Evaluate success of game and incorporate "lessons learned"

This framework proved effective, based on this experience of designing and playing a game with a group of planning professionals and students. However, the test sessions also showed the necessity of testing and revising the game before implementation. As demonstrated by my study, a game that makes sense on paper may have limitations that only become evident when playing the game. Taylor and Martin (2014) noted the need for testing, and retesting, games until they run smoothly and accomplish the learning objectives. The importance of testing a game before using it for public engagement is clear. Testing is no less important when designing games as decision-making or rehearsal tools. Several rounds of testing may be appropriate for games intended for public audiences, and the test groups should closely approximate the game's final audience. When testing the game, the planner should solicit participant feedback about the game's structure during the debriefing session.

Therefore, the revised framework for designing and implementing planning games includes nine steps (new steps marked with *):

1. Identify planning situation
2. Identify purpose and audience of planning game
3. Identify goals and desired or expected outcomes of game
4. Develop structure of game
5. Develop scenario, problems, solutions, and character roles
6. *Pilot the game with test group

7. *Evaluate success of test game and incorporate "lessons learned"
8. Implement the revised game
9. Evaluate success of game and incorporate "lessons learned"

Additionally, the feedback I received from the participants in my two test sessions illustrates the need to build an appropriate level of structure into the game, whether through character roles, problem definition, or solutions. This structure works to constrain the actions of the game, freeing participants to work creatively within those constraints, as described above. Even in a free-form game, some structure is necessary to enable success (as defined by the goals of the game) and participants' enjoyment and engagement. When I revised the Game of Springfield, I elected to leave the roles less defined and add more structure to the problem and solutions. I based this decision on the abilities of the intended audience of my game, based on two dimensions of game design: abstraction and complexity (see fig. 5.1).

Abstraction refers to the degree to which a problem reflects a real-life situation. The more abstract a problem, the less directly relatable it is to real life. However, the closer the problem is to a real-world problem, the less players are able to divorce themselves from their individual viewpoints. Some degree of abstraction, perhaps through fictionalization of details, is needed to help players overcome their worldviews and empathize with their characters' viewpoints. Achieving the right degree of abstraction determines how salient the game is for participants. Game designers need to balance the abstraction needed to free participants from their daily life with the concrete reflection of reality needed to apply game lessons to real life (Dionnet et al. 2007).

Complexity refers to the "wickedness" of the problem. The simpler the problem, the easier it is to understand and to solve, but the less directly relatable it is to real life. As Camargo, Jacobi, and Ducrot (2007) note, games that are too simple may have limited potential for learning and limited applicability in the real world.

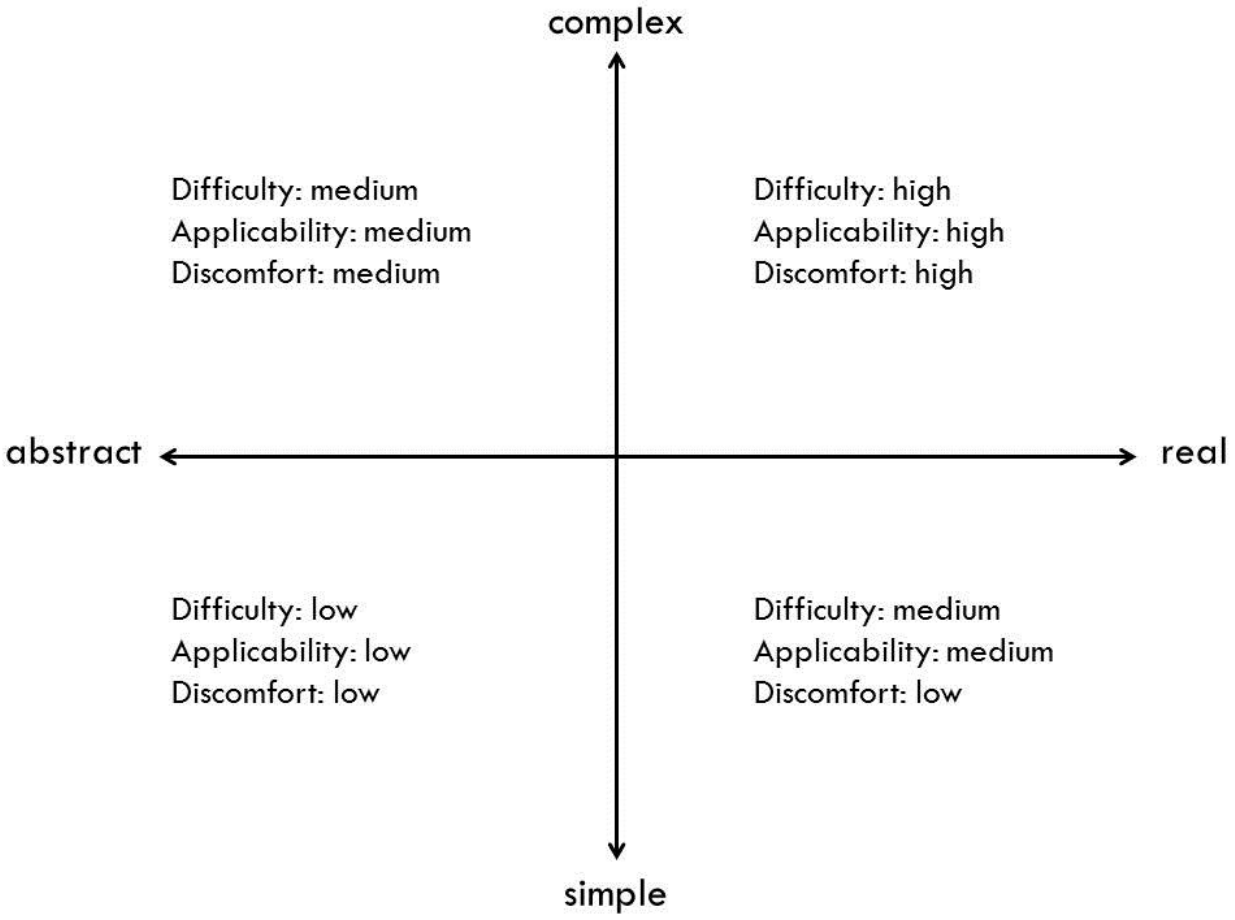



Figure 5.1. Two dimensions of game design: a more abstract or more real-life problem (horizontal continuum), and a more simple or more complex problem (vertical continuum). The levels of difficulty, applicability to real life, and participants' discomfort varies in each design combination.

By combining the complexity and abstraction dimensions, four possible combinations of game problem design result: Complex/Abstract, Complex/Real, Simple/Abstract, and Simple/Real (see fig. 5.1). The levels of difficulty to reach a solution, applicability to real life, and participant discomfort vary in these four combinations. A Complex/Real game problem is highly applicable to real life, but difficult to solve (as are all wicked problems) and will provoke high levels of discomfort among participants. A Complex/Abstract game problem has medium levels of difficulty, applicability, and discomfort. A Simple/Abstract game problem is less difficult to solve and

provokes low levels of discomfort among participants, at the cost of low applicability to real life. A Simple/Real game problem has medium levels of discomfort and applicability, with low levels of participant discomfort.

The appropriate combination for a particular game depends on the audience for which it is intended. For example, a game for planners can tolerate higher levels of complexity; planners generally have more experience with wicked problems than does the general public. Here, the particular subgroups of the audience dictate where, along the two design dimensions, a game should be situated. The game designer can mitigate participant discomfort by providing more direction or structure in the roles, in the definition of the problem, in the solutions, or in the directions to participants. If players are aware that the problem is complex and that a solution is difficult, they may be more willing to work through the discomfort of the situation. By working through difficult situations together, more trust develops between participants and may persist beyond the situation (game) itself (Innes and Booher 2010).

## Summary

Based on my observations of the test sessions and the feedback I received from participants, I modified several aspects of the Game of Springfield's design. Participants will still begin the session by randomly drawing a series of tokens. I removed the location of residency and location of employment categories, replacing them with an employment category. I also removed the business-owner token, replacing it with a condo-owner token. Participants will have five minutes after they draw tokens to write or draw their characters' stories before playing the party game. These changes afford players the opportunity to solidify their roles and understand which characteristics are most important to their characters' viewpoints.

I also revised the game's scenario and solutions to emphasize design solutions to the intersection and deemphasize the growth (policy) issues. I changed the possible solutions to be a menu of design elements. The group will have a budget with which to "purchase" elements from the menu, each of which will have a monetary cost. Many elements will also have non-monetary costs, in order to reflect the real-life financial and spatial opportunity costs inherent in planning problems. I will present players three solution packages, which emphasize vehicle, bus, or bicycle and pedestrian improvements. I added several props to the game: maps of Springfield, Evergreen, and the Main/Oak intersection; chips representing the available design elements; and game money.

The game ends when the allotted time has elapsed or when players spend their budget on solutions, whether one of the packages presented to them or their own combination of design elements from the menu. These changes narrow the scope of the game, which elicits conflict, enriches debate, and enhances gameplay, without sacrificing all the complexity of real-world planning problems. The game also provides opportunities to understand scarcity and opportunity costs in a planning context.

In addition to making changes to the design of the Game of Springfield, I also modified the game design and implementation framework, based on my observations of the game and feedback from participants. I now include a testing stage, allowing the planner the chance to pilot her game with a test group and make modifications before implementation.

# Chapter 6: Conclusion

This chapter summarizes and describes the limitations of my research, and suggests directions for future study.

## Summary and Conclusions

The purpose of my research was to develop, describe, and test a process for designing and implementing role-playing simulation games in the planning process. To test the process, I designed a game and implemented it with two groups of professional planners and planning students. This test, in the participatory action research framework, integrated planners into my research as collaborators in the production of a new planning tool.

My research aimed to answer four questions. First, *is the game design and implementation process framework that I have developed effective? What modifications are needed?* Based on the feedback I received from participants in my study, and my own observations of the session proceedings, I conclude that the game design and implementation process I developed is effective. After playing my game, I added two steps to my framework, to reflect the need for piloting a game before implementing it with the intended audience. My game design and implementation framework is therefore a nine-step process, as follows:

1. Identify planning situation
2. Identify purpose and audience of planning game
3. Identify goals and desired or expected outcomes of game
4. Develop structure of game
5. Develop scenario, problems, solutions, and character roles
6. Pilot the game with test group

7. Evaluate success of test game and incorporate "lessons learned"
8. Implement the revised game
9. Evaluate success of game and incorporate "lessons learned"

Additionally, playing my game with the two test groups highlighted the need for clarity in game design along two structural dimensions: abstraction and complexity. Based on the game's goals and audience, the planner determines the appropriate degrees of the problem's abstraction (more or less like real life) and complexity (more or less wicked). The audience's capacity for discomfort in ambiguous situations should be balanced with the difficulty of resolving the problem and with the applicability to the real world. The nine-step design and implementation process affords the planner the chance to determine which aspects of the game (roles, problems, solutions) are highly structured and detailed, and which aspects remain open.

Second, *are games useful for analyzing planning situations and decisions?* Based on the feedback from participants and my literature review, games are useful for analyzing planning situations and decisions. The Game of Springfield served as an example of a way to analyze a planning situation. With the modifications I described in chapter 5, the game's scenario and structure more closely reflect a typical planning situation. During both debriefing sessions, participants indicated that they find games to be useful to the planning process, particularly in terms of developing empathy, considering alternate viewpoints, and rehearsing planning situations. All participants in the test groups agreed that games are useful planning tools. When I asked about planning situations that might benefit from using games, participants identified decision-making, rehearsal, and public engagement situations. While the sample of participants is small and not representative of the planner population (participants volunteered to be in the study and many self-identified as enjoying games), this agreement suggests that games do have the potential for wide-ranging applications.

Third, *are games useful for public engagement?* Participants in both groups agreed that games are useful tools for public engagement. Daniella (Session 2) acknowledged that she has used role-play

with the public in workshop settings in order to include viewpoints not held by the participants. Other participants easily identified public engagement situations that would benefit from using games. While none of the participants used games in exactly the way I discuss in this work, they saw the connections between their professional experience and my work.

Fourth, *will practicing planners consider using games as decision-making tools in the planning process? Will they consider using games as public engagement tools?* Participants in both groups made connections between games and their professional experience. Situations they thought would benefit from games included preparation of planners or planning commissioners for public meetings (rehearsal); neighborhood planning; and stakeholder, advisory, or focus groups. Participants noted a number of benefits to role-playing games, including the ability to represent viewpoints different from those of the participants (especially useful when the participants are a homogenous group but the community is not); short- and long-term development of empathy on an individual basis; and consideration of all users of a space. Participants also noted that games can focus discussion and steer participants away from hot button issues; balance education and outreach in a planning setting; and make hypothetical situations more tangible to the public.

Three branches of theory provide frameworks for describing, understanding, and using games. Rational planning corresponds to positivism and to using games for testing. Incremental planning corresponds to complexity theory and to using games for prediction. Collaborative planning corresponds to communicative action and to using games for problem-framing. Participatory action research (PAR) provides a lens for understanding and designing public participation processes. PAR includes three components: research, education, and action (Fals-Borda 1991), all of which have relevance to the planning process. Games are a type of PAR and provide many learning opportunities for participants and the facilitator, and for learning and

participating in a safe environment. This learning is transferable to real-world situations, providing a foundation for future social action.

I played the Game of Springfield during two sessions in May 2014. Both groups had similar results, coming to agreement and making similar recommendations. Both debriefing sessions provided feedback about the game itself and the broader applications of games in planning. Based upon this feedback, I revised the game to clarify roles, allow more time for character development, use a scenario more reflective of real-life planning concerns, and include additional props to enhance gameplay.

## Limitations

Clearly, with a small sample size (seven participants across two groups), the ability to draw firm conclusions is limited. I recruited participants through the University of Washington Department of Urban Design and Planning's Professionals Council, a group of Western Washington-area planners who volunteer to mentor students in the Master of Urban Planning program. I contacted a number of Professionals Council members and asked them to forward my recruiting letter to their professional contacts. I recruited other students in my program as well. In no way were these participants representative of planners in the Seattle area. All players volunteered to participate in my research, and most indicated that they had some interest in games (whether as gamers, or having used games in educational or research settings). Likely, these participants are biased toward using games in planning settings.

Additionally, as indicated in previous chapters, my work focuses on face-to-face games as tools to address local, contextualized planning problems. Computer and virtual gaming, including online gaming, opens up other possibilities for using games in planning. Planning done for larger or

more distributed audiences—regional, state, or federal planning, for example—may be more suited to virtual gaming. The face-to-face games I studied are more suited to fine-grained, specific, contextual planning situations. Computer simulations offer other opportunities in planning, particularly when detailed models exist or can be developed, as in resource management situations. This study focused on a planning situation where the input of affected citizens and value judgments are more important to making a decision than are detailed outcomes or scenario planning. In situations with complex systems, computer simulations may be appropriate. As these are quite different applications of gaming and simulations than I studied, my findings and conclusions may not apply in these situations.

## Future Directions for Research

Based on this work, more research is needed in three areas: testing the revised Game of Springfield, testing games as tools for public participation, and studying virtual and online games as planning tools. While the revised Game of Springfield seems to address problems identified by the initial test sessions, as demonstrated by this study, some limitations only become evident by playing the game. I propose that this game can be implemented both with planners and with the public as participants. For planners, the game serves as a demonstration of the potential for using games in the planning process. The game's scenario reflects a typical planning situation, one that planners can analyze through the gameplay. The Game of Springfield follows a structure that may be useful in participatory budgeting applications. The details of this game's scenario also can be modified to use it as a rehearsal for a public outreach event. Role-playing games serve as rehearsal tools (van Ments 1999), allowing participants the opportunity to run through a situation and practice how to react to unanticipated circumstances. As Marta (Session 2) noted, by rehearsing these reactions before a

public outreach event, planners increase their capacity to deal with unexpected responses rather than simply shutting them down. Thus, one arm of future research is testing the revised Game of Springfield, perhaps with the public as well as planners, as well as modifying the game's details for use as a rehearsal tool for planners.

A second area for future research is testing games as public engagement tools. Even in my limited study, professional planners saw the potential for using games in public outreach settings. However, better evidence of this tool's utility will come from repeated testing in public outreach settings, ideally in several settings in order to analyze comparatively what situations may be best suited for using games.

A third area for future research is exploring the potential of virtual and online games as planning tools. As McGonigal (2011) notes, the number of digital gamers and time spent gaming is skyrocketing, and the trend is expected to continue. As new generations grow up with gaming technology in their pockets, digital gaming increasingly is a normal, quotidian activity. Thus, digital games—specifically online games—hold promise for use in public engagement: SimCity writ large. More research is needed to identify which planning situations are suited to virtual, rather than face-to-face, gaming.

Thanks to decades of research across multiple academic disciplines, the perception of games as frivolous amusements is decreasing. However, the question remains: why games? McGonigal provides compelling reasoning: a good game "is an extremely powerful tool for inspiring participation and motivating hard work." A good game provides players with "fiero," which is "the Italian word for 'pride,' … adopted by game designers to describe an emotional high … what we feel after we triumph over adversity" (McGonigal 2011, 33). As planners face ever more difficult and complex problems—while trying to motivate citizens to participate in solving these problems, and

endeavoring to be inclusive of all in decision-making—this powerful tool for participation and hard work, and the resultant fiero, may be exactly what we need. Upcoming generations will expect more interaction in public processes such as planning, and games are an excellent way to provide an engaging, interactive, and productive experience, in a format that average citizens understand and enjoy. In the face of wicked and complex problems that involve heterogeneous populations, we need innovative, collaborative, and creative processes. Games are one such process, which planners can use to make better decisions and engage the public we represent.

# Appendix A: Game Materials

## Icon Key

homeowner[1]

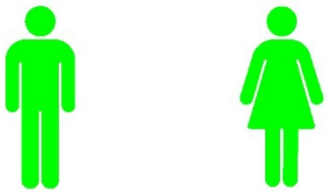
renter[2]

business-owner[3]

native-born[4]

foreign-born[5]

[1] Image source: Home by Andrew Fortnum from The Noun Project.
[2] Image source: Building by Nate Eul from The Noun Project.
[3] Image source: Briefcase by Ana Gonzalez from The Noun Project.
[4] Image source: America by Bohdan Burmich from The Noun Project.
[5] Image source: Globe by Andrew Forrester from The Noun Project.



single[6]

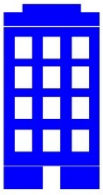
single with kids[7]

married[8]

married with kids[9]

live in Evergreen[10]

live outside Evergreen[11]



work in Evergreen[12]


work outside Evergreen[13]

[6] Images are in the public domain.
[7] Image source (both): Family by Luis Prado from The Noun Project.
[8] Image source: Couple by baabullah hasan from The Noun Project.
[9] Image source: Family by baabullah hasan from The Noun Project.
[10] Image is in the public domain.
[11] Image source: Route by Juan Pablo Bravo from The Noun Project.
[12] Image source: Building by Benoît Champy from The Noun Project.
[13] Image is in the public domain.

usually bike[14]

ride the bus[15]

drive[16]

walk[17]

new to Evergreen[18]

established in Evergreen[19]

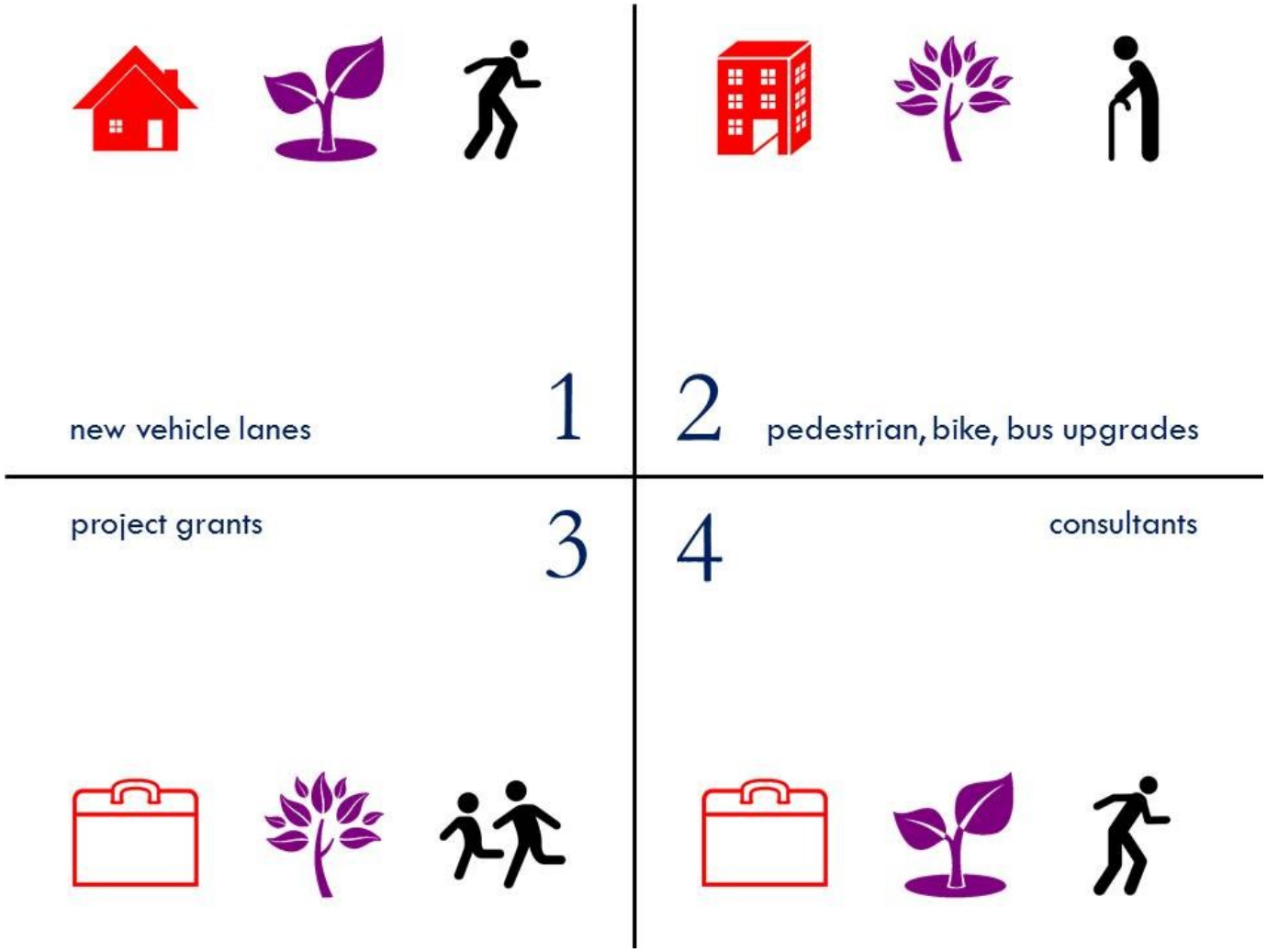
young[20]

middle-aged[21]

elder[22]

[14] Image source: Bicycler by Jakob Vogel from The Noun Project.
[15] Image is in the public domain.
[16] Image (regular car) is in the public domain. Image source (Smart car): Car by Johan Victor Nilsson from The Noun Project.
[17] Image source: Footprint by Jule Steffen & Matthias Schmidt from The Noun Project.
[18] Image source: Plant by Rick Pollock from The Noun Project.
[19] Image source: Tree by Francesco Terzini from The Noun Project.
[20] Image is in the public domain.
[21] Image source: Person by Murali Krishna from The Noun Project.
[22] Image source: Senior Citizen by Lemon Liu from The Noun Project.

## Game Board


new vehicle lanes
1
2
pedestrian, bike, bus upgrades
project grants
3
4
consultants

# Appendix B: Workshop Outline

**Timeline**

| *Time for Activity* | *Activity* | *Cumulative Time of Workshop* |
|---|---|---|
| 0:10 | Introduction, Consent Forms | 0:05-0:15 |
| 0:30 | Assign Roles, Introduce Scenario | 0:15-0:45 |
| 0:30 | Party Game | 0:45-1:15 |
| 0:15 | Introduce Proposed Solutions and Purpose | 1:15-1:30 |
| 1:00 | Main Event | 1:30-2:30 |
| 0:15 | Break | 2:30-2:45 |
| 1:00 | Debriefing | 2:45-3:45 |
| 0:15 | Wrap-up and Thank Yous | 3:45-4:00 |

**1. Introduction (10 minutes)**

Objectives:

- Introduce researcher and research
- Describe workshop schedule
- Obtain consent
- Answer participant questions

Resources needed:

- Consent forms (two copies per participant)
- Pens

**2. Assign Roles and Introduce Scenario (30 minutes)**

Objectives:

- Assign roles to participants through random selection
- Describe scenario (background story and purpose for meeting)

Instructions to researcher:

- For assignment of roles, pass each container around one at a time; each participant draws a token from each container.

Roles:

- Homeowners / renters / business owners
- Native-born / foreign-born
- Single / single parent / married / married parent
- Live in the neighborhood / live outside the neighborhood
- Work in the neighborhood / work outside the neighborhood
- Own a car / don't own a car
- New to the neighborhood / established in the neighborhood
- Young / middle-aged / elderly

Scenario description:
You represent a focus group of citizens in the Evergreen neighborhood in the city of Springfield. The planning department has invited you here today in order to discuss the intersection of Main Street and Oak Street. This intersection is considered the center of Evergreen, located on the commercial strip and surrounded by residential areas. New residents and new businesses are moving to the area, bringing increasing congestion to the intersection. The city has allocated funding to address this problematic intersection and has asked you here today to make a recommendation as to how to spend that money. As a representative of the planning department, I will bring your decision to the planning director, who will bring your recommendation to the City Council. The Council expects to implement your decision. Outside groups have expressed their support of this focus group.

Resources needed:

- Character tokens and descriptions
- Containers for tokens
- Map of Springfield
- Map of Evergreen

**3. Party Game (30 minutes)**

Objectives:

- Describe purpose and rules of party game
- Warm-up and icebreaker (participants)
- Learn and solidify roles (participants)

Game instructions:
Each of you will spend some time talking to other characters, one-on-one or in small groups. Introduce yourself in character to others, including where you live, work, and play. Spend some time talking about the problems you see with the Main and Oak intersection. At any time, feel free to break out of character to ask others for suggestions about how to play your character or to make suggestions to others.

Resources needed:

- Map of Springfield
- Map of Evergreen

**4. Introduce Proposed Solutions (15 minutes)**

Objectives:

- Describe proposed solutions
- Reiterate purpose of meeting
- Describe rules of game
- Answer participant questions

Game description and instructions:
The City of Springfield has allocated money to address the problems with the Main and Oak Streets intersection in Evergreen neighborhood. The planning department is evaluating four potential solutions:

10. Widen the streets and add more lanes for traffic;
11. Redesign the streets to enhance pedestrian, bicycle, and public transit infrastructure;
12. Provide project grants to local businesses or neighborhood groups; or
13. Hire an outside consulting group to perform a study of the intersection and provide recommended solutions.

Your job, as the focus group, is to discuss these solutions and come up with a recommendation for me to bring to the planning director. The City Council will likely implement the solution you recommend. I will ask some guiding questions to facilitate discussion.

Resources needed:

- Map of Evergreen
- Sketches of proposed solutions

**5. Main Event (1 hour)**

Objectives:

- Participants decide among solutions (or propose new solution)

Resources needed:

- Map of Evergreen
- Sketches of proposed solutions
- Pens and paper

**6. Break (15 minutes)**

**7. Debriefing (1 hour)**

Objectives:

- Reinforce participants' learning during the workshop
- Make connections between workshop and professional experiences
- Obtain participants' feedback about workshop successes and areas for improvement

Key questions:

- Did you have any discoveries during the game about the character you played?
- Did your character have a different perspective on the situation than you, as a professional planner, did?

- Do you think that using games can help you, as a professional planner, better analyze planning situations and decisions? What current or past planning situations might have benefited from using this tool, and why?
- Do you think that games can be useful for public engagement? What situations might you consider using this tool?
- What changes might you make to the game process if you were to use this tool in a planning situation?

**8. Wrap-Up (15 minutes)**

Objectives:

- Thank participants for their participation
- Answer questions
- Ensure participants have researchers' contact information

# Appendix C: Observation Worksheets

## Observation Worksheet Number ___ of ___

**Activity:** Assign Roles and Introduce Scenario

**Roles Selected:**

| *Subject Identifier* | *Character Name* | *Role Characteristics* |
|---|---|---|
| A | | |
| B | | |
| C | | |
| D | | |
| E | | |
| F | | |
| G | | |
| H | | |
| I | | |

## Observation Worksheet Number ___ of ___

**Activity:** Assign Roles and Introduce Scenario

**Observations:**
Pay attention to: What questions did participants ask? Are there any parts of the scenario description or directions that are unclear? What reactions did participants have to process of role selection? Does role selection work in this manner? Is timing of this activity appropriate? What did or did not work? Any other observations?

## Observation Worksheet Number ___ of ___

**Activity:** Party Game

**Observations:**
Pay attention to: Does this game achieve objectives of making participants more comfortable in their roles? Is timing of the party game appropriate? What did or did not work? Any other observations?

## Observation Worksheet Number ___ of ___

**Activity:** Main Event

**Observations:**
Pay attention to: Which solutions did participants gravitate toward? Did agreement emerge, and if so, when? Did any participants dominate the discussion? Did any participants seem disengaged? Is timing of the main event appropriate? What did or did not work? Any other observations?

## Observation Worksheet Number ___ of ___

**Activity:** Debriefing

**Observations:**
Pay attention to: Does this activity achieve objectives of reinforcing learning? Are participants able to relate game activities to their professional experience? Do they think games are useful planning tools for decision-making and/or public engagement? What did or did not work about the workshop, according to participants? Is timing of the debriefing appropriate? What did or did not work about the debriefing? Any other observations?

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