Summary

This book explains how science (and scientist) interacts with democracy during the decision making process. This interaction defines which role a scientist play during a decision making process. The understanding of these roles is important because we (scientist) participate in decision making processes and our expertise is used to define the course of action on policies that ultimately will impact the society we lived in. These concepts and understanding are important tools to know, to improve the leadership capacities of ourselves.

Depending on the way democracy is conceived, science can play two different roles. According to James Madison (1787) democracy requires that competing factions engaging into political debate, the resulting compromise reflects the best possible balancing of conflicting demands, called this “interest group pluralism”. According to this principle, scientist should aligns with their favored faction and offer their expertise as an asset in political battle. In contrast, according to Schattschneider (1787), democracy is conceived as a competitive system in which the public is allowed to participate by voicing its views on alternatives presented in the political process. Policy alternatives come from scientists, whose role is to clarify the implications of their knowledge, and to provide such implications in the form of policy alternatives to decision makers when they decide about the course of actions. These two concepts represent two opposite implications of how scientist should participate in the decision making process. In the former, it is required that scientist act as advocates of the faction they are supporting while in the latter scientist should act as non-partisan information providers to demonstrate the set of possibilities and the policy consequences of certain actions.

Science can be conceived in two ways, a linear model where science is isolated from the society and it should be carried out from basic research to applied research. In contrast, a stakeholder model of science recommends to include science users since its production and consider important the use of science in the decision making process. In addition, the author divides in four categories the main roles that a scientist can play: (1) Pure Scientist, who seeks only truth without consideration for practical implications of the results of his/her research, (s)he is not interested in participating in the decision making process; (2) Science Arbiter, who focus on hypothesis that can be resolved through scientific inquiry, and who is willing to be part of the decision making process as a resources to answer factual questions; (3) Issue Advocate, who is willing to take sides in a contested political issue and use their status as a scientist, or invoke their specialized expertise to argue for their case, (s)he tells what should ought be preferred because (s)he is confident about the understanding of the problem; and (4) Honest Broker, who seeks to integrate scientific knowledge with stakeholders concerns in the form of alternative possible courses of action, (s)he engages in decision making by clarifying the scope of the choices available to decision makers. These concepts are presented are related as follows:

<table>
<thead>
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<th>View of Democracy</th>
<th>View of Science</th>
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<tr>
<td>Madison</td>
<td>Linear Model: Pure Scientist  Stakeholder Model: Issue Advocate</td>
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<tr>
<td>Schattschneider</td>
<td>Science Arbiter  Honest Broker of Policy Alternatives</td>
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All these information is important because it allows us to adjust the type of role we would like to play according to the circumstances. The author presents a flow chart that shows the criteria for determining the roles of science in policy and politics.

Particularly, I can see all this information being useful in my career. I am involved in many decision making processes, this information allows me to understand the role I should play to be more effective in communicating my results and knowledge, as well as the roles other scientist are playing during the decision making.
Chapter 1 – Four idealized roles of science in policy and politics

This chapter starts explaining four main roles that scientist can play:

Roles that serve only as information resources

*Pure Scientist*: Seeks only truth without consideration for practical implications if the results of his/her research. His/Her role is to share fundamental information about facts.

*Science Arbiter*: serves as a resources to answer factual questions, don’t tell the decision maker what to prefer. A science arbiter focus on positive questions (hypothesis) that can in principle be resolved through scientific inquiry.

Roles of scientist that are involve in decision making process

*Issue Advocate*: Tells what should ought be preferred because (s)he is confident about the understanding of the problem and also (s)he thinks understands the preferences of the decision maker. The issue advocate is willing to take sides in a contested political issue and use their status as a scientist, or invoke their specialized expertise to argue for their case.

*Honest Broker*: Provides information on all possibilities and let the decision maker reduce the scope of choices. It can be comprehensive (explaining all the possibilities) or limited (explaining only a subset of possibilities). The honest broker engages in decision making by clarifying (and sometimes expanding) the scope of a choice available to a decision maker. (S)He seeks to integrate scientific knowledge with stakeholder concerns in the form of alternative possible course of action.

Stealth Issue Advocate: seeks to compel a particular decision outcome.

All this science and expert opinions ultimately may be relevant to a particular decision depending on what the decision maker value actually values.

Chapter 2

Another important concept is the role of science in society, and the role of scientist in a democracy. Mostly two way of interpreting these roles can be used. One of the roles of scientist can be explained through the *interest group pluralism concept*. According to James Madison (1787) democracy requires that competing factions engaging into political debate, the resulting compromise reflects the best possible balancing of conflicting demands, called this “interest group pluralism”. According to this principle, scientist should aligns with their favored faction and offer their expertise as an asset in political battle.

The second role can be explained through the *semi-sovereign people concept*. According to Schattschneider (1787), democracy is a competitive system in wich the public is allowed to participate by voicing its views on alternatives presented in the political process. Policy alternatives come from experts, whose role is to clarify the implications of their knowledge, and to provide such implications in the form of policy alternatives to decision makers when they decide about course of actions.