An Introduction to Punctuated Equilibrium: A Model for Understanding Stability and Dramatic Change in Public Policies

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This briefing note belongs to a series on the various models used in political science to represent public policy development processes. Each of these briefing notes begins by describing the analytical framework proposed by the given model. With this model in mind, we then set out to examine questions that public health actors might ask about public policies. Our aim in these notes is not to further refine existing models; nor is it to advocate for the adoption of one model in particular. Our purpose is rather to suggest how each of these models constitutes a useful interpretive lens that can guide reflection and action leading to the production of healthy public policies.

The punctuated equilibrium model aims to explain why public policies tend to be characterized by long periods of stability punctuated by short periods of radical change. This model can help public health actors understand why governments are sometimes receptive to evidence and discussion leading to significant policy change, whereas at other times, government seems to be less receptive to change and only open to making minor adjustments. This model can also help guide the actions and strategies that public health actors can use to influence public policy. To this end, we will provide some insights on how public health actors can use the punctuated equilibrium model to analyze situations and identify opportune moments and strategies for acting upon policies.

Description of the model

The initial observation of Frank R. Baumgartner and Bryan D. Jones (1991, 1993) was that, historically speaking, public policies are characterized by long periods of stability punctuated by short periods of radical change. In *Agendas and Instability in American Politics* (1993), their benchmark work, Baumgartner and Jones demonstrate that a variety of public policies – on nuclear energy, tobacco, automobile safety, pesticides, urban planning, etc. – have undergone such cycles.

Tobacco policies can serve as an example to illustrate this idea. Up until 1965, this policy had changed very little, whereas in the late 1960s and early 1970s a radical change occurred in response to the actions of certain stakeholders, such as the US Surgeon General’s 1964 publication of the now-famous report entitled *Smoking and Health*.

To incorporate their insight into public policy analysis, Baumgartner and Jones sought to reconcile in an integrated model the long periods of equilibrium, already well explained by the incrementalist model, and the abrupt punctuations of political systems. This became known as the punctuated equilibrium model.

Figure 1: Graphic representation of punctuated equilibrium
“Punctuated equilibrium” - a concept derived from paleontology

Baumgartner and Jones borrowed the name for their model, punctuated equilibrium, from a theory of modern paleontology which refuted incrementalism, a theory according to which species evolve slowly by means of successive slight mutations (Gould & Eldredge, 1977). Like their paleontologist colleagues, Baumgartner and Jones opposed a linear view of the evolution of systems. Thus, they developed an explanatory model that calls into question the idea that policies always evolve in a regular and gradual manner.

BACKGROUND: PLURALISM AND POLITICAL SUBSYSTEMS

To ensure a good understanding of the punctuated equilibrium model, it is necessary to briefly describe the context of its emergence in the United States. This model is rooted in pluralism, an approach that has dominated American political science for nearly a hundred years. According to pluralism, due to the limited attention, time and expertise of decision makers, power tends to be distributed among more specialized subsystems, where decisions that are often considered rather technical or routine are made. Thus, at all levels of government (federal, state, or local), subsystems tend to be created. There are too many of these subsystems to enumerate. They touch on subjects as varied as affordable housing, public transit, immunization and access to books.

Each subsystem is typically composed of a small number of concerned actors, usually specialists from the government, industry and civil society. For example, in the case of immunization, the subsystem would include, in particular, the following participants: civil servants, institutional directors, professional orders, unions, pharmaceutical companies, researchers, users associations, and civil rights defence groups.

These subsystems are often highly autonomous and largely unconstrained by public opinion and democratic forces. As such, they tend to offer enormous benefits to large economic concerns, which have the resources to assert their interests. That is why Baumgartner and Jones refer to these systems as subgovernments. To protect the autonomy of such subsystems, influential members who benefit from these systems tend to erect defence mechanisms and entry barriers that work in their favour. Some examples would be the criteria for group recognition, the assignment of titles and responsibilities and the production of specialized literature.

Given that the members who benefit from a subsystem have an interest in maintaining a certain status quo, these systems of limited participation are considered to be highly resistant to change (Cobb & Elder, 1983). The stability of these subsystems is well documented in incrementalist theory, according to which their natural state is one of equilibrium, with changes essentially taking the form of small advances and marginal changes to resource allocation (Lindblom, 1959).

Roger W. Cobb and Charles D. Elder (1983) noted one process that could nevertheless explain the destruction of these protected, stable subsystems that are characterized by limited participation: conflict expansion. According to Elmer Schattschneider (1960), who had previously studied this issue, conflict expansion occurs when an increasing number of people mobilize around an issue. As the circle of participants grows, the risk that the associated subsystem will collapse also increases. For this reason, the concept of conflict expansion is one of the cornerstones of the punctuated equilibrium model.

A period of radical change

In the mid 1970s in the United States, several policy subsystems were destroyed or radically changed. Many cases have been documented, including those of policies on tobacco, pesticides, air and water pollution, airlines, trucking, telecommunications and nuclear power (Campbell, 1988; Derthick & Quirk, 1985; Fritschler, 1989).
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For public health actors, the concept of conflict expansion implies that they could benefit from:

- Approaching and trying to interest those who are not currently involved in a subsystem, either due to inertia, indifference or lack of capacity, as a means to bring about significant changes to a policy;
- Emphasizing the technical and scientific nature of issues within subsystems where their acknowledged expertise allows them to incrementally initiate desired changes.

The case of American civilian nuclear power

The case of American civilian nuclear power policy is one of those documented by Baumgartner and Jones. In this case, when the subsystem was first established in the mid-1940s, there were few dissenting voices. The first objections came from large national unions in their complaints about the subsidies being granted to the nuclear industry. Subsequently, environmentalists and local activists contested regulatory criteria and the manner in which licenses were issued. Finally, scientific experts began asking questions about safety. Since the latter could not simply be dismissed as disgruntled activists, the groups most actively opposed to the industry, with environmentalists at the forefront, exploited divisions within the expert community to change the public’s perception of the policy (the policy image) promoted by popular media and to expand the conflict. Once the image had indeed changed, opponents were able to engage the attention of new policy venues: first regulatory bodies, then Congress, the courts and local governments. In the case of nuclear power, opponents exploited a negative aspect (safety) to change the policy image and insert the issue they were raising into new policy venues.

Since its emergence, this model has been refined and applied to the analysis of budgetary allocations (Jones, Baumgartner, & True, 1998), priorities in infectious diseases management (Shiffman, Beer, & Wu, 2002), the evolution of health systems (Feder-Bubuis & Chinitz, 2010), defence policies (Mortensen, 2005) and automobile energy efficiency policies (Perl & Dunn, 2005).

Policy images

The way in which a public policy is discussed in public and in the media produces what Baumgartner and Jones term the policy image. Other authors refer instead to the framing of a public policy. A public policy’s image is based on facts, or rather on a set of facts, interpreted through a prism of beliefs and values. Michael A. Smith (2002, p. 10) asserts that a policy’s image is based on a combination of values and empirical knowledge. Because a policy’s image is founded on beliefs, facts can be distorted by, for example, lack of awareness of the risks, demonization of actors, myths related to controversial measures, etc.

A policy’s image, which determines how we view a policy, can be positive or negative. A positive policy image typically leads to incremental changes, whereas a negative image is more likely to lead to a punctuation. Because the public tends to lose interest in a positive image (there are so many negative images that require our attention!), a positive image is said to protect a subsystem.

During periods of stability, a subsystem highlights the facts that strengthen the policy image it wishes to maintain and pushes to the background facts that are inconsistent with this image or support a rival policy image. In other words, a subsystem dwells on positive facts and ignores negative facts. This process serves to strengthen the positive image, thus protecting the established subsystem. On the other hand, the accumulation of unresolved negative facts can, ultimately, put the subsystem at risk of punctuation.

Since public policies address complex issues, they are usually compatible with several images (Cairney, 2012, p. 185). Paul Cairney uses the example of tobacco. This public issue can be framed in several ways: in terms of health, individual freedom, the economy, inequality, safety or employment. Since the energy that can be devoted to any one problem is limited, there is a tendency to simplify issues and,
accordingly, to opt for a single image. This image, in turn, will have an impact on the policy. Returning to the example of tobacco, if the image is linked to health, the policy will probably attempt to limit tobacco consumption, whereas if the image is linked to jobs, the policy may be one that offers subsidies to farmers producing tobacco or upholds tobacco sponsorships, which foster tourism and the associated economic benefits.

Taking the death penalty in the United States as an example, Frank R. Baumgartner, Suzanna L. De Boef and Amber E. Boydstun (2008) demonstrate how its image has evolved and the impact this has had on public policy. Shifting away from an essentially moral question (is the death penalty good or bad?) and a constitutional issue (is it constitutional?), some actors have managed to bring into focus the image of "innocence," i.e., the possibility that some of those on death row are innocent, and this has led to a reduction in the number of American states that practice the death penalty. As this example shows, images which cast doubt about an issue and show concretely what is at stake, such as the reality of the government killing an innocent person, can have a greater effect than a hypothetical or more abstract question (is it good or bad for a government to condemn a citizen to death?).

On occasion, even powerful and autonomous subsystems lose control of the policy image that protects them. A change in the environment, whether in the guise of a critical event or the intervention of a strategic actor (and usually a combination of the two), can draw the attention of the media, the general public or non-specialists toward a new fact, – one which is viewed more negatively and casts a shadow over the policy image. As the image changes, the possibility of a radical policy change increases. Such radical change, according to Baumgartner and Jones, is less the result of an actual material change, and more the result of a change in a policy's image. Thus, a subsystem that is unable to control its policy's image tends towards collapse.

For this reason, the groups involved in a public debate have an interest in influencing a public policy's image. Groups that are active within an established subsystem (who can be considered to be "favoured"), benefit from a positive image which protects the subsystem and their position within it. The actors who make up the subsystem, generally civil servants, politicians and industry actors, therefore tend to control information about the policy, including which problems the policy should resolve, who is responsible for those problems and which solutions can be considered. These actors also tend to erect defence mechanisms to protect a policy's image and entry barriers that favour those who share their convictions. Opponents of the subsystem (labelled "disgruntled") – this group includes activists and members of civil society – instead stand to benefit from promoting an alternative policy image, in order to mobilize new allies or attract the interest of new policy venues (see next section and Figure 2).

Analyzing the policy's image

For an actor wishing to influence public policy, it may be relevant to know the status of the policy's image. In order to find out, one might ask:

- What is the policy's overall image?
- What facts play a role in generating this image?
- How are these facts interpreted? (values and beliefs)
- What are the dominant values of the target public?
- How do the media cover this policy?
  - Have many articles on the policy appeared? (attention)
  - Do media reports support or oppose the existing policy? (tone)
  - Has there been an observable change in the media coverage?

In the battle to control the characterization of the policy's image, media coverage can have a big impact. Media coverage is generally considered to comprise two main dimensions: attention (the number of articles on a topic) and tone (the perspective adopted in the articles). According to Baumgartner and Jones (1991), as media attention increases, whether positive or negative, public acceptance decreases. The logic of conflict expansion helps explain how significant media attention can pose a risk for a system in equilibrium. Indeed, the more discussion surrounding an issue, the greater the likelihood that additional actors, with different ideas, visions or values, will become interested. The more new actors become interested, the more difficult it becomes to maintain an image of the issue as a technical matter. In other words, mounting media interest in an issue diminishes the
possibility of this issue remaining in the control of a subsystem that is relatively autonomous and independent of public opinion and democratic forces. It also becomes more likely that the issue will appear on the agenda in other policy venues (see below for an explanation of policy venues) and that a significant policy change will ensue. In the case of civilian nuclear energy policy used by Baumgartner and Jones (1991, p. 1062) to illustrate the dynamic of conflict expansion, the media’s role was significant. As soon as the media began to take an interest in this topic, the number of parliamentary committees addressing the issue, along with the number of hearings held by these committees, increased sharply, from two committees holding five hearings in the 1950s to fourteen committees holding more than 50 hearings in the 1970s.

Act in accordance with the policy’s image

The more universally recognized a system’s positive image, the greater the subsystem’s equilibrium and the more probable that policy change will be slow and marginal. Given such a situation, policy makers are likely to be more receptive to proposals for minor changes to a policy than to information calling for major changes. However, an unforeseen punctuation is always a possibility. To prompt your reflections on how to act in accordance with a policy’s image, consider:

- What degree of consensus does this policy enjoy?
  - What concerns are expressed by elected officials during parliamentary committee meetings?
  - Are public health proposals discussed? Are they discussed in a positive light?
  - Do other groups present an alternative image of the policy? Is it compatible with the image that public health actors wish to promote?
  - Is the number of disgruntled groups increasing? Do these groups enjoy media visibility?

Policy venues

Policy venues are defined by Baumgartner and Jones (1993, p. 32) as "the institutional locations where authoritative decisions are made concerning a given issue." Baumgartner and Jones assert that our societies (and particularly American society) offer a multitude of policy venues. No rule determines which policy venue in society has complete jurisdiction over a particular issue. These two authors deny that institutions have exclusive control in any area, affirming instead that the policy venues associated with a debate can change, or even multiply, over time. Thus, the issue of affordable housing can be studied by a parliamentary commission, by a provincial public body like the Régie du logement (Québec’s rental board), by municipalities and even by the federal government within the context of certain programs.

Some of these policy venues have decision-making abilities, while others act as public forums and agents of change for a policy image. In the second case, a strategic actor may use a new policy venue as a source of potential allies. For example, a municipal council may act as a governing authority (by banning smoking in local bars and restaurants, for example) and the same council may lend support to another policy venue (by adopting a resolution in favour of a provincial law, for example).

Every policy venue has a decision-making bias, because the participants, the values, the concerns and the decision-making processes vary from one policy venue to another. When a question or an issue begins to be debated or acted on in a new policy venue, those who had previously dominated the policy process may find themselves in the minority, and yesterday’s losers can become today’s winners. In fact, presenting their position on an issue in new policy venues in an effort to find a more favourable audience is the main mechanism of action used by discontented groups to provoke a policy punctuation or, in other words, a radical change.

To illustrate this point, consider the groups intent on improving the food supply (sugary drinks, junk food, food deserts). They seek favourable policy venues, such as a government that is ready to impose a tax, a municipality that wants to regulate fast food restaurants and even public agencies that want to reduce their clientele’s food insecurity.
Venue shopping
If an issue deemed important is not receiving the attention of the institutions currently exercising authority in the relevant field, is it possible to "shop for a new policy venue"? A problem that is not being debated in one subsystem may very well be of interest in another policy venue. Within Canada’s British parliamentary system, there exist a multitude of policy venues capable of launching a debate, allocating resources or adopting regulations. Listed below are a few examples of policy venues:

- Parliamentary committees;
- Municipalities;
- School boards;
- The courts;
- Governing boards and public agencies.

When venue shopping, it is essential not only to identify policy venues, but also to understand their context and decision-making rules and to determine which policy images these policy venues would prefer to be associated with. It may be useful to begin by learning about the actors in the subsystem:

- Who holds authority in this subsystem?
- How many actors are there?
- How much power does each actor have?
- Does the composition of the subsystem change over time?
- Are there actors who wish to expand their field of activity?

Interactions between policy images and venues
According to the punctuated equilibrium model, the interaction between policy image and policy venues explains the creation, maintenance, alteration and destruction of political subsystems. It can be said that subsystems are created and thrive when images are positive, attention is limited and policy venues are favourable. In a similar manner, subsystems can be destroyed when events or strategic actions weaken a policy's image and strengthen an alternative image, attracting the interest of other policy venues. External shocks, such as economic crises, epidemics or natural disasters, can also highlight the inadequacies of a political subsystem. They may, through their consequences, directly challenge the existing policy image or the policy venue that fosters it.

A policy's image and its venue are closely related. For as long as a policy venue remains unchallenged and retains its monopoly in an area of activity, an image change is unlikely. Similarly, positive policy images which protect subsystems do not encourage the involvement of new policy venues. This process through which a policy's image and venue mutually reinforce each other, which is referred to as negative feedback, promotes the stability of a subsystem. In the presence of such negative feedback, knowledge of new facts, brought to light, for example, by research or monitoring activities, is less likely to lead to significant changes in policy. Thus, the ability to control a policy's image delays or prevents its change.

Conversely, policy image and venue can become mutually-reinforcing agents of change. If a policy's image changes, new policy venues will probably emerge and, if a policy's venue changes, its image may change as well. This process, referred to as positive feedback, could lead to a punctuation (Arthur, 1988; Baumgartner & Jones, 1991, 1993). Under such conditions, new information is more likely to get a sympathetic hearing and to lead to significant policy changes, whether the result is a simple alteration or the complete destruction of a subsystem.

Although such punctuations are unpredictable, Baumgartner and Jones describe three situations that could lead to the "collapse of a subsystem":
1. The mobilization of the general public, as suggested by Schattschneider;
2. The involvement of concerned outsiders who ally themselves with discontented actors;
3. The desire of decision makers in another policy venue to expand their own field of activity.

Thus, the interaction between policy image and policy venue has two effects: they can interact to strengthen the current subsystem or to fuel rapid changes. Thus, according to the punctuated equilibrium model, the stability of public policies and their rapid change derive from the same process.

Analysis of the interactions between policy images and venues allows us to better understand why, despite strong arguments and evidence that support change, governments long retain public policies that
favour certain actors. The same analysis also explains through which processes governments can come to adopt policies that mark significant breaks with the past. By using the punctuated equilibrium framework, public health actors will be better situated to analyze the public policy fields of particular interest to them and to determine what type of action to take given their goals and contexts. The following figure shows the pathway of a policy in relation to its image.

The determination of municipal speed limits effectively represents the interaction between policy image and policy venue in the public health field. For a long time, speed limits on local streets were seen as a technical problem limited to the management of traffic flow (policy image). For this reason, municipal engineers were almost solely responsible for this policy (policy venue). In recent years, other issues have also been associated with speed limits: quality of life, safety and public health. Thus, the image has changed, and new actors have taken an interest: public health departments, citizens’ groups, NPOs, elected municipal officials. Suddenly, there is awareness that new policy venues (municipal councils, for example) can play a role in setting speed limits.

How can this model guide public health actors?

According to Baumgartner and Jones, it is possible to distinguish two strategies practised by political actors. Public health actors can make use of these same strategies. The first strategy, as has been mentioned, consists of trying to influence the policy image, whether by controlling it or by changing it. The second strategy consists of trying to act upon policy venues, either by limiting access to them or by gaining support for one’s position in new policy venues.

When a policy image is predominantly positive, specialists may require autonomy and resources to continue their work. Stable subsystems are created during periods when a policy’s image is positive.

Figure 2: Equilibrium and punctuation in relation to a policy’s image
Once in place, these subsystems are maintained by a small group of beneficiaries who, generally, consult with experts. Specialists dominate the decision-making process when an issue is presented as a technical problem rather than as a social problem. If an issue is tethered to ethical, social or political questions, a much wider range of participants may wish to get involved: pressure groups, activists, legislative committees, the media (Baumgartner, 1989). This can be observed when it comes to proposals for taxes on soft drinks or drinking water fluoridation, to take two examples.

The resources needed to control a subsystem in equilibrium are definitely not on a par with those required to change a policy's image, involve new policy venues or seek new participants. Some groups are more adept at creating subsystems than destroying them, and vice versa. Financial resources, for example, usually suffice to keep a subsystem in equilibrium (through lobbying activities, marketing and job creation), whereas resources such as scientific knowledge, skilled strategic actors and political support would be needed by those hoping to expand conflict. The resources required for undertaking these actions are unevenly distributed; forcing actors to always consider the possibility of a punctuation.

**Limitations of the punctuated equilibrium model**

There has been some criticism of the punctuated equilibrium model. In general, these critiques draw a portrait of a seductive, but incomplete, theoretical model. The first limitation concerns its universality. Several authors have called into question its applicability in certain contexts (Howlett, 1997; Givel, 2006, 2012). The American system is described as a unique example of pluralism: a federation composed of 50 independent states, a militant judiciary, powerful and competent interest groups, real separation of the executive and legislative branches and a congress organized into congressional committees. All these characteristics combine to favour a dynamic of punctuation by providing discontented groups with many appeal mechanisms, but these are not present in all political systems.

A second criticism concerns the model's lack of precision regarding the institutional constraints affecting subsystems. They also fail to discuss the reactions that can be expected from threatened subsystems. Thus, even if actors manage to expand conflict and cause a punctuation, their option (the policy image they support) will not necessarily be adopted. The results of a punctuation are highly unpredictable, and this is a risk that advocates for change must run.

Finally, Baumgartner and Jones do not consider the role of political parties in their analyses and fail to discuss their involvement in subsystems. In an effort to address this final shortcoming, the two authors, in the second edition of their benchmark work, propose a general theory of government information processing which includes, among other things, the role of political parties. But an explanation of this theory is far beyond the scope of this document.

**Conclusion**

All things considered, Baumgartner and Jones may be acknowledged for having made two broad contributions to the analysis of public policies. Firstly, they demonstrated how closely a subsystem is tied to a policy's image. As long as a policy's image remains stable, the strategic actions of a discontented actor are unlikely to lead to the collapse of a system and its policy. Attempts at change are mitigated by a positive image and a supportive policy venue, which act as defence mechanisms. Their second contribution was to demonstrate the vulnerability of these same subsystems. The punctuated equilibrium model depicts governance systems as subject to influence from new ideas and from appeals for change from discontented actors and, once influenced, able to generate new policies. The mechanisms available to the discontented are revealed as: change policy image, expand conflict to include actors who were previously uninvolved and shop for new policy venues.
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