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I. Introduction

Jack L. Walker's article *The Diffusion of Innovations Among the American States* (APSR, 1969) is considered to be a classic in the politics, policy and administration studies, well beyond the study of American politics (Baumgartner, 2006). The paper is one of the most frequently cited papers in the American Political Science Review in late 2013, almost half a century after its publication.[1] Its impact as measured by the number of annual citations is growing, and in many respects it still defines the field. The paper has attracted so much attention partly because it is the first major political science research paper to introduce a diffusion perspective into the field. But it also represents an increase in the interest in the phenomena of diffusion among scholars of European and global public policy, international relations and comparative politics. Probably the most notable renewed interest is the impact on the more qualitative framework of study of policy learning (Bennett & Howlett, 1992) and policy transfers (Dolowitz and March, 1996). After Walker's study was published, diffusion became a major topic in public policy and administration. What Walker tells us – and as I'll argue later we are still digesting – is that interests, behavior, practices and norms are highly interdependent. The likelihood of change in one actor's interests, behavioral practices and norms is positively correlated with the likelihood of similar change among other actors. Still, almost half a century after the publication of the study, the

[1] Draft chapter for inclusion in The Oxford Handbook of the Classics of Public Policy and Administration, edited by Steven Balla, Martin Lodge and Edward Page. I am grateful for advice and comments on previous versions of this paper by Frank Baumgartner, Fabrizio Gilardi, Ira Sharkansky, Jacint Jordana and Craig Volden. Usual disclaimers apply.

full implications of this insight are yet to be absorbed in political science and in the social sciences generally.[2]

The origins of the diffusion literature in the social sciences lie largely in the discipline of sociology and in the work, inter alia, of Tarde (1903), Ryan and Gross (1943) and Coleman et al. (1957). The cumulative knowledge in the field has been meticulously documented by the late sociologist Everett M. Rogers, in the five editions of *The Diffusion of Innovations* (1962, 1971, 1983, 1995, 2003). These works on diffusion were long highly influential everywhere, but in political science. Invisible walls separated the study of politics from the study of society, and this situation has only partly improved since the publication of Walker's paper. The invisible walls are still there and prevent a more productive exchange within the social sciences and beyond them. Walker's interest of in diffusion did not originate in the literature written by sociologists or other social scientists but instead in his own experience as the overseer of an internship program in his first year as an academic in the tenure track. In an interview that he gave in 1984 he told the story of how he became interested in diffusion:

> One of my first duties at the University of Michigan was to oversee an internship program in Lansing, the state capital . . . I was in Lansing almost every week and I often spent hours between meetings with nothing to do. As much out of boredom as for any scientific purpose, I often visited legislative hearings while waiting for my next appointment. Discussions in these hearings about the adoption of new legislation usually led immediately to comparisons with the experiences of other states. Bureau chiefs were almost always asked by legislators, many of whom were attorneys, if there were any precedents for the new programs that they were proposing. It appeared that the legislators were trying to control the administrators, in sorting out the many complex issues before them, by emulating the decisions of legislators in other states who had already dealt with similar problems. Legislators were much more inclined to accept a new idea if it had been given a trial in a state that was similar to Michigan. The proposals made by the civil servants were derived from specialized publications and conferences sponsored by their professional societies. The legislators were acting as gatekeepers for proposals arising from these expert networks and only approved of innovations that had proved

> successful in the states they regarded as legitimate points of comparison. I reasoned that if legislators were employing this same decision rule in all states, a stable pattern of adoption of new ideas must exist, perhaps with the more cosmopolitan states acting as leaders, and the more parochial ones acting as followers.[3]

Thus, it was a sort of a coincidence that led Walker to the design of an ambitious research program (and to 'distract' him from his studies of pluralist forms of power in American politics). Coincidence aside, his ambitions were considerable, and so were the fruits of his work. In what follows I discuss Walker's work and assess its reception and its influence in and on our field. At the same time I offer some suggestions on the future progress of diffusion scholarship and the potential of the approach to redefine our understanding of politics and policy. I conclude with the observation that while the study of diffusion is flourishing as never before, it is still far from fulfilling its potential.

1. Walker's article and its reception: An overview

Walker's paper is a study of a rather common but under-researched form of decision making, A kind of interdependent decision making where decision-makers interact with one another, whether they know it or not.[4] In Walker's words, it deals with "one of the most fundamental policy decisions of all: whether to initiate a program in the first place" (Walker, 1969, p. 880). It is therefore a study of decision making with regard to the costs and benefits of keeping the status-quo relative to an alternative situation where one follows the interest, behavior, practices and norms of other, close or distant members of a group. In the language of policy diffusion, it is also a study of interdependent decision making in a collective setting. Where the group members actors successively adopt the same policy, in partial or full response to the decisions of other members of the group. The data and the laboratory for the study are the American states, and the explanandum is operationalized as an aggregate measure of the speed of adoption. States, Walker suggested, have traditionally been judged according to the relative speed with which they have accepted new ideas. Speed and group convergence on similar policies is a proxy of leadership. Some states are leaders while others are merely followers and laggards. Innovations are implicitly

assumed to be good, and so more explicitly, is speed. "I assume that the pioneering states gain their reputations because of the speed with which they accept new programs" (Walker, 1969, p. 882). The research questions that Walker therefore poses are; First, why do some states act as pioneers by adopting new programs more readily than others; Second, once innovations have been adopted by a few pioneers, are there more or less stable patterns of innovations diffusion among the American states; Third, if so, what are they?

To answer these questions Walker collected data on eighty-eight different new programs which were enacted by at least twenty state legislatures prior to 1965, and for which there was reliable information on the dates of adoption. These programs are distributed across twelve areas of government: welfare, health, education, conservation, planning, administrative organization, highways, civil rights, corrections and policy, labor, taxes, and professional regulation. Most of the relevant legislation was adopted during the twentieth century, but sixteen of the programs diffused primarily during the latter half of the nineteenth century. Once the eighty-eight dates lists of adoption were collected, they were used to create an innovation score for each state. The first step was to count the total number of years which elapsed between the first and the last recorded legislative enactment. Each state then received a number for each program, which corresponds to the percentage of time that elapsed between its original adoption and its adoption in that state. The first states to adopt the program received a score of 0, and the last state to do so received a score of 1.[5] The innovation score for each state is simply 1 minus the average of the sum of the state's score on all issues. The higher the innovation score, therefore the faster the state has been, on average, in responding to new ideas or policies. The composite index, which has been challenged shortly after the article was published, resulted in a ranking of the US states according to their innovativeness. At the top of the list, with the highest scores, were some of the largest and richest states such as New York, Massachusetts and California, while at the bottom were states such as South Carolina, Wyoming, Nevada and Mississippi. The index has proved to be most useful for the study of the economic and political correlates of the adoption of diffusion. In some parts of the analysis Walker divided the innovation score over three periods. In the later parts of the paper, and in order to demonstrate the role of diffusion, he went on to

deconstruct the index, suggesting that it masked some pertinent information. A more useful representation of the ranking, he wrote, would have to be in the form of a tree.

> At the top of the tree would be a set of pioneering states which would be linked together in a national system of emulation and competition. The rest of the states would be sorted out along branches of the tree according to the pioneer, or set of pioneers, from which they take their principal cues. (Walker, 1969, p. 893)

The innovation score was a bold move that condensed time, space as well as policy attributes such as degrees of contestability and saliency into one big dependent variable represented by a composite score. This score included policies that were diffused between 1870 to 1966). It covered laws that applied diverse policy instruments, from regulation to fiscal expenditures, via the creation of new state organizations. These laws covered everything from the economic to the cultural via the social, with policies having highly diverse impacts, from minor to large and from the highly contested to the highly consensual. And they covered states as different as South Dakota and New York, and from the Rocky Mountain states to Florida. As we will see, the innovation score attracted many admirers, very few followers and strong criticism.

Having provided a preliminary measurement of the phenomenon of innovation, Walker set out to explain it. Why, he asked, should New York, California and Michigan adopt innovations more rapidly than Mississippi, Wyoming and South Dakota? His first step was to look at the usual suspects, that is, far away from diffusion. Based on previous research, it was expected that the larger, wealthier states, those with higher degrees of industrialization and urbanization, would have the highest innovation scores. In these places there were more resources and creativity to allow both a more experimental approach and the wide distribution of resources. On the top of these potential explanations, he assessed the innovation score against certain institutional variables such as the degree of party competition and a state's system of legislative appointments. First, He hypothesized that parties which often faced closely contested elections would try to outdo each other by embracing the newest, most progressive programs. And by that they would naturally encourage the rapid adoption of innovations. Second, those representatives from newly developing

urban areas would be more cosmopolitan, better informed, and more tolerant of change. Hence, more likely to adopt innovation. His findings went a long ways towards corroborations of these expectations. Innovativeness was found to be positively correlated with bigger, richer, more urban and more industrial states as well as with states which have more fluidity and turnover in their political systems and where legislators more adequately represent their cities.

These results however did not satisfy Walker's curiosity, and he set out to deepen his analysis by looking at how innovations spread from the pioneering states to those with lower innovation scores. This is where the diffusion perspective comes in. The analysis first based on a conceptualization of actors that draws on the founding fathers of behavioral decision making and the model of bounded rationality. Walker's decision makers are "struggling to choose among complex alternatives and constantly receiving much more information concerning his environment than he is able to digest and evaluate" (Walker, 1969, p. 889). The limits of rationality imposed by human capacities prevent the decision maker from maximizing his benefits in every situation. Instead, he chooses a course of action which seems satisfactory enough under the circumstances. The rule of thumb that Walker's decision makers employ says "*look for an analogy between the situation you are dealing with and some other situation, perhaps in some other state, where the problem has been successfully resolved*" (p. 889). State decision makers, he asserts, are constantly looking to each other for guidance on action in many areas of policy, such as the organization and management of higher education or the provision of hospitals and public health facilities. In all cases, however;

> the likelihood of a state adopting a new program is higher if other states have already adopted the idea. The likelihood becomes higher still if the innovation has been adopted by a state viewed by key decision makers as a point of legitimate comparison. Decision makers are likely to adopt new programs, therefore, when they become convinced that their state is relatively deprived or that some need exists to which other states in their "league" have already responded. (Walker, 1969, pp. 896–7)

What emerges from the study, Walker concluded, is a picture of a national system of emulation, competition and interpretive framework which moves between the poles of

rational decision making on the one hand and sociological institutionalism on the other. In fact, in order to make the point even stronger he wrote; "I am arguing that this process of competition and emulation, or cue taking, is an important phenomenon which determines in large part the pace and direction of social and political change in the American states" (Walker, 1969, p. 890). Much of the diffusion research is still based on these two pillars of competition and emulation.

The states in Walker's study are grouped into regions based on both geographical contiguity and their place in the specialized set of communication channels through which the new ideas flow, information and policy cues. Through this nationwide system of communications a set of norms or national standards for proper administration are established. This system links together the center of research and generation of new ideas, national associations of professional administrators, interests groups and voluntary associations of all kinds into an increasingly complex network which connects the pioneering states with the more parochial ones (Walker, 1969, pp. 896–8). This network-based interpretation of the diffusion process still dominates diffusion studies. Finally, Walker's interpretation of the diffusion processes hints at the process whereby innovation is coming to be "taken for granted", an insight which is central to the world-society approach to diffusion (Meyer et al., 1997; Finnemore, 1996). Once a program has been adopted by a large number of states;

> it may become recognized as a legitimate state responsibility, something which all states ought to have. When this happens it becomes extremely difficult for state decision makers to resist even the weakest kinds of demands to institute the program for fear of arousing public suspicions about their good intentions; once a program has gained the stamp of legitimacy, it has a momentum of its own. (Walker, 1969, p. 891)

All in all, by bringing together pieces of legislation that were not considered as parts of a whole, Walker created an innovation score which ranked states according to the speed in which they adopted innovations and offered an original perspective on the determinant of this ranking. A new approach to public policy and public administration was established. As far as I can establish, never before had different acts of government been brought together in such a systematic study of political behavior and decision making. This was an example to follow in the slowly dawning

new era of big data. As we will see, this aspect would attract and draw criticism while the diffusion element of the study would be generally embraced as original and useful.

The scale of the data collected and the analyzed is impressive, also the forceful presentation of diffusion. But what really makes Walker's article such a frequently cited classic? Walker himself provided part of the answer in the interview cited above, where he offered four reasons. First, it provided a simple way to derive new meaning from the hundreds of otherwise unrelated case studies of governmental policy making that had been published over the years. Second, the paper drew both upon studies of individual political actors and upon studies of national patterns of policy making. Third, it was a quantitative study that appeared just as quantitative research was becoming popular in this field. Fourth, it included a convenient innovation score for each state that many other scholars were able to employ in their own research.[6] But while Walker's own testimony offers important insights on the influence of his paper, I think that there is a bigger story to tell, a story which explores which of the various aspects of the paper and the research program are still really influential as well identifying how and how greatly, these influences affect the current research agenda on diffusion. I turn my attention to these issues in the next parts of the article.

2. Walker's article reception and the Gray–Walker Debate

The wide attention that Walker's paper received was reignited with the publication a few years later of Virginia Gray's seminal study "*Innovation in the States: A Diffusion Study*" (1973a). While framing her research questions somewhat differently and opting for a different research design, Gray dealt essentially with the same issues as Walker did. Her findings were somewhat different, and so was her approach to the study of diffusion. Gray was not shy of pointing out these differences, and this led to the publication of a response from Walker and a rejoinder from Gray in the pages of the *American Political Science Review* (Walker, 1973; Gray, 1973b). In perspective, the similarities between the two authors seem more striking than the debate that followed. Gray's paper has its own merits, it can be considered a classic on its own right, and represents another high point in the history of the field. It included, unlike Walker's, a formal model of diffusion and also defined diffusion explicitly drawing on Roger's nominal definition, which became the gold standard in social science studies of diffusion. In addition, Gray emphasized the importance of top-down (or

point-source) diffusion (in this case the role of the federal government), which was missing from Walker's analysis.

The 88 different policies that Walker aggregated across time and space in order to build his impressive data set, amounted for Gray to a contentious research practice. Her data, by contrast to Walker, was selected purposely from issues areas central to the "have–have not" struggle, where the federal influence was minimal and reflected the long durability of the issue (see Savage, 1978, for a critique of Gray). With this research design, she challenged Walker on two additional grounds. First, she didn't find any evidence for regional diffusion. It is not that Gray rejected regional forms of diffusion; she just suggested that she did not find any evidence of it. Yet, since her data set was confined to have–have not policies, it may well be the case that diffusion is less likely to occur in areas and arenas of strong political conflict.[7] This is an important issue that is still not discussed enough and is waiting for some serious scholarly treatment.

At the same time, Gray also contested the validity of Walker's index of innovativeness, claiming that states do not remain peculiarly innovative over a long period of time and she was skeptical that a quality called "innovativeness" could ever be isolated and adequately described. "[O]ne may question", she wrote, "the fundamental assumption of a 'composite innovation score'" – namely, that "innovativeness" exists as a single factor among states. Operationally, the question becomes "Do the states which are early to adopt one law also adopt other laws first as well?… The interesting information that is concealed by a simple average ranking is the range for any one state" (Gray, 1973a, p. 1183). She found that "it was shown that 'innovativeness' is not a pervasive factor; rather it is issue-and time-specific at best" (Gray, 1973a, p. 1185). Gray's assertions on innovativeness as a trait of states were based on a limited number of cases which were carefully selected in light of criteria that are highly relevant for the study of politics, inter alia the have–have not criteria. Yet there was nothing in the selection criteria which made them more suitable for examining this particular issue. Walker's research design, with its wider scope, was much more suitable for testing this issue. This disagreement was probably one of the reasons that many scholars did not came back to the issue or continue Walker's work in this direction.[8] It is only in the last few years that scholars have returned to this

issue with data sets which are wider in scope and generally confirm Walker's results (Boushey, 2010; Nicholson-Crotty, 2009; Boehmke and Skinner, 2012). Later on, Gray seemingly changing her view on this issue, wrote that "[T]he consistency of state rankings over time is quite remarkable" (Gray, 1994, p. 244).

Let us focus our attention on the rules and purposes that govern the collection of the two data sets, an issue which I find especially useful to discuss. Both Walker and Gray were proponents of Large-*N* analysis, and they both embraced a diffusion perspective for the study of state politics, which hitherto had been mainly grounded in an intra-state tradition. Beyond the immediate and salient issue of the innovation index, they differed on the question of the desired research design. In particular on what could be sensibly inferred from each design and the theoretical and scientific values of variations and diversities in the data. Whereas Walker's design covered 88 programs - Gray covered 12 programs; whereas Walker's data covered almost a century (1870–1960) - Gray's data covered almost two centuries (1784–1969), both covered the same number of states (the members of the American federal system). Social scientists usually distinguish research designs according to the number of cases, contrasting Large-*N* and Small-*N*. But also, even if less frequently, adding the notation of Medium-*N* (Ragin, 2000). In our case, the number of cases will usually refer, in the current terminology, to the number of American states. This practice misses something of importance in the *diversity* of cases and in the creativity with which we can use strategically different research designs. While we have notations for the number of cases, where casing is defined as more of the same thing (hence, Large-N, Medium-N and Small-*N*) we do not have appropriate notations for the depth (duration and longitudinality) of cases. The same goes for notations for the diversity and scope of different cases that are part of the phenomenon under study. I therefore denote the depth or duration by Deep-*N* and the diversity of cases covered by Wide-*N*. The notation of Deep-*N*, which may sound strange at first (like many innovations), captures the temporal and historical dimensions of the case selection. Cases in this line of thinking are therefore collections of dimensions, and this goes beyond the distinction of Teune and Przeworski (1970) which places unidimensional cases on the continuum of most-similar versus most-different system design. Recognizing that cases are not "given fact" but instead are scholarly constructions (Ragin and Becker, 1992), we use this terminology in order to distinguish between cases according to the

diversity of programs or policies they include. At the same time the terminology and notations make our research practices and decisions on which cases to include more transparent and therefore potentially more contestable, which I take to be good scientific practice.

Table 1 demonstrates the architecture of choice on two of these dimensions – diversity and number of systems. (To simplify the example, the table leaves out the depth-longitudinal dimension of shallow-*N* to deep-*N* and focuses only on diversity and number). To illustrate the differences between research designs, I provide examples from the diffusion literature. The diversity of cases in represented by the notations of Narrow-N, Intermediate-N and Wide-*N*. While Walker's design can be describe as Wide-*N* (88 programs), Gray's design is narrower (12 programs) and best titled Intermediate-*N*. The two authors covered the same number of American states and therefore do not vary on the number of similar cases.

The distinction between the number of cases and the diversity of cases allow us to emphasize the importance of compound research designs for theory validation.[9] But there was one more issue at stake here. Walker's research design followed the logic of maximizing validity via inferential strategies, that designed to maximize diversity via random selection of cases, The more the merrier. In contrast, Gray's research design followed the logic of maximizing validity via inferential strategies which are comparative, case-oriented and selective. There is less room for debate here on the question of the better design as it is necessary to examine theories against different data sets rather than in light of one criterion of selection. The more diverse and wider scope of Walker's data set provides better evidence for the diffusion of policy innovations in the American states. We can say that its external validity is better than Gray's. Yet Gray's design offers evidence, that on issues of distributive and redistributive conflicts, the innovation index is less useful for a more general population of policies. Her observations and findings thus refine the internal validity of those of Walker.

Table 1: Maximizing what: Large-*N* vs. and with Wide-*N*

		Diversity of types of cases (Diversity of programs included in the study from Narrow to Wide)		
		Narrow-*N*	Intermediate-*N*	Wide-*N*
Number of cases from the same type	Small-*N*	One or few similar policy innovations studied in one or a few states e.g. Frenkel (2005)	Intermediate number of diverse policy innovations studied in one or a few states e.g. Jordana et al. (2006)	Highly diverse collection of policy innovations, studied in one or a few states. e.g. Bennett (1997)
	Medium-*N*	One or few policy innovations studied in medium number of states e.g. Berry & Berry (1990)	Intermediate number of diverse policy innovations studied in medium number of states e.g. Gray (1973a)	Highly diverse collection of policy innovations studied in medium number of states e.g. Walker (1969)
	Large-*N*	One or a few policy innovations studied in large number of states e.g. Henisz et al. (2005)	Intermediate number of policy innovations studied in large number of state e.g. Simmons and Elkins (2004)	Highly diverse collection of policy innovations studied in a large number of states

It is also useful to examine the differences between the two data sets and criteria of case selection using the notion of "consilience". The term originated in the work of the British philosopher of science William Whewell (1794–1866), who was also the first to coin the term "scientist". Evidence, argued Whewell, is "of much higher and more forcible character when it enables us to explain and determine cases of a *kind* different from those which were contemplated in the formation of our hypothesis" (Whewell, 1840, p. 230). Consilience is this superior test that makes one theory and one research design far stronger than another. According to Thagard;

> To say that a theory is consilient is to say more than that it "fits the facts" or "has broad scope"; it is to say first that the theory explains the facts, and second that the facts that it explains are taken from more than one domain. These two features differentiate consilience from a number of other notions, which have been called "Explanatory Power", "Systematic Power", "Systematicization", "or Unification"… We are not concerned with the explanation of a horde of trivial facts from the same class… In inferring the best explanation, what matters is not the sheer number of facts explained, but their variety and relative importance… (Thagard, 1988, pp. 80, 81)

The consilience criteria of validity seem to offer support for Walker's assertion that diffusion matter but also that the innovation index is a valid measure of states' tendency to innovate.

To summarize, one can classify and thus distinguish between different research designs with respect not only to the number of cases but also to their diversity on different dimensions, inter alia depth and width. Cases diverge on different dimensions including longitudinal (Shallow-*N* to Deep-*N*) and type (e.g. Narrow-*N* vs. Wide-*N*). Gray's design thus differed therefore from Walker's not so much in the number of cases (Large to Small dimension) but in scope (Wide to Narrow dimension). Ironically, neither Gray's nor Walker's design became the conventional practice in the discipline. Almost all diffusion studies – and diffusion is a representative case here for wider practices – focus either on a large number of cases of a single issue or on a single case study. Research designs that compound time, type of cases and an intermediate or medium number of cases in a comparative design or of the one performed by Gray or a more diverse (Wide-*N*) number of cases of the sort undertaken by Walker are rather rare. It is encouraging however that after many years in which the innovation index and the ambitious collection of data sets were set aside, there is a new interest in both practices.

3. Walker and diffusion research in perspective

Despite the impressive success of Walker and the diffusion perspective there is still much to be desired. My reading of this literature suggests, similarly to Meseguer and Gilardi (2009), that a "true" political economy of diffusion is yet to emerge.[10] Or maybe perhaps "true" is less proper here than a more ambitious theory. We are looking for an approach which will make a more significant impact on the study of political, social and economic behavior. Impressive progress in the methodology of research is accompanied by critical reflection among the community of diffusion scholars, despite growing interest in the field.[11] Thus, for example, Graham, Shipan and Volden write **"**as political science moves toward its thousandth published article on policy diffusion, the piecemeal and disconnected nature of the research to date has left us intellectually poorer than we should be…. [w]e are nowhere near having a systematic, general understanding of how diffusion works" (Graham et al., 2013, p.673). This is not a new conclusion, Berry and Berry, the pioneers of event history methods in diffusion research, wrote more than 20 years ago that "while expanding the scope of policy areas subject to innovation analysis, the research since 1975 has not led to major advances in our conceptualization of state innovation or our empirical approach to its investigation; the same basic approaches have simply been applied in new policy context" (Berry and Berry, 1990, p. 395). Why such dissatisfaction? What is its source? In seeking the causes of this dissatisfaction in the progress and the impact of the diffusion process, I concur with a recent observation by Ethel Solingen who wrote; "…in efforts to understand the nuts and bolts of whatever it is that diffuses, we have often paid less attention to conceptualizing diffusion itself, leaving the notion open-ended, taken for granted, studied more tacitly than explicitly" (Solingen, 2012, p. 631). In other words, we are experiencing a "conceptualization deficit" in the study of diffusion. The new frontiers lie in theory and innovation in research designs and data collection rather than solely in methodological advance. These frontiers require us to invest mainly in what diffusion is, rather than in the current focus on its correlates or mechanisms.

Rogers' authoritative definition of diffusion dominates the development of the diffusion literature. This definition, which changed only marginally over the years, was accepted implicitly or explicitly without critical discussion despite its emphasis

on the social and communicative aspects of the diffusion process, rather than on its political and administrative aspects. It all starts with Walker, who drew on Rogers, but avoided directly citing his definition. Instead he defined the subject of his research as simply the relative speed and the spatial patterns of adoption of new programs. It continued with Gray, who offered a definition which was based on Rogers'.[12] So did Berry and Berry, who referred to diffusion following Rogers, as "the process by which an innovation is communicated though certain channels over time among the members of a social system consisting of the governments of the fifty American states and maintain that the pattern of adoption of the policy by the states results from states' emulating the behavior of other states" (Berry and Berry, 1999, p. 171).[13] This conceptualization of diffusion, which draws so closely on Rogers, is taken for granted either explicitly or implicitly. At the same time, empirical research nowadays seems to draw on an operational definition which was offered by Strang (1991, p. 325). The term "diffusion", wrote Strang, refers to all processes in which "prior adoption of a trait or practice in a population alters the probability of adoption for remaining non-adopters". This is the definition of diffusion that was adopted by Simmons and Elkins (2004, pp. 171–2), and the same approach is reflected in Graham et al. paper (2013, p. 675): "diffusion occurs when one governments' decision about whether to adopt a policy innovation is influenced by the choices made by other governments. Put another way, policy adoptions can be *interdependent*, where a country or state observes what other countries or states have done and conditions its own policy decisions on these observations". Another way in which scholars operationally captured diffusion is via as the varied *rate of adoption* or *relative speed* by which different institutions, events, states or actors adopt policy innovation (e.g. Berry and Berry, 1990).

Little regard for the conceptualization of diffusion itself on the one hand, and for a sensible proxy for the diffusion that allows useful operationalization of the rate of adoption on the other, created a rather convenient equilibrium. This situation, alongside impressive methodological advances on the one hand, and a bias towards the correlates of diffusion (that is, the mechanism) on the other, create a gap where explanans is a black box. We know more about the mechanisms of diffusion than about diffusion itself. Yet what we know or conceptualize as diffusion rests on sociological analysis that frames diffusion as a communicative and social interaction

rather than a political interaction. The black box of diffusion should be open, and the interaction between adopters and non-adopters over time (Deep-*N*), diversity of programs (Wide-*N*) and group size (Large-*N*) should be understood as political processes, running via political channels of decision rules with conflicts, powers struggles and institutions at the center of the definition of diffusion. This exercise requires us to politicize the interaction process and thus to imagine it in a more political context. Thus, interaction as influence rather than the thinner notion of interaction as signal or information; interaction as an agenda setting process rather than the thin notion of interaction as decision making; interaction as an exercise in domination and power rather than simply rational discourse; interaction as a legitimization exercise rather than utilitarian one. Such an approach allows us to see the diffusion effect as a particular form of group decision making which applies not only to policy innovation but to any form of political interaction. In other words, the playing field for diffusion analysis is wider than the current one.

The road to a richer and politically oriented conceptualization of diffusion processes should also be taken in reaction against two self-imposed boundaries that Walker set to the field by distinguishing between invention and innovation on the one hand and between adoption and implementation on the other. "We are studying the relative speed and spatial patterns of *adoption* of new programs, not their invention or creation", he wrote, and thus set one of these boundaries. And one page on he set the second boundary: "I am not interested in the effectiveness of Oklahoma's civil rights commission, but in where the legislature got the idea… and why it acted when it did" (Walter, 1969, p. 882). The invention and the adoption decision were thus separated as fields of study. And similarly, the decision to adopt was separated from the processes of localization, translation and transplantation. Analytical rigor and focused discussion have many merits, but they also have costs. Invention and innovation are not separate, not even in Walker's study where he counted the first instance of adoption of a policy (e.g. invention) as the starting point of the process of diffusion. They are likewise not separate in the world of entrepreneurs, whether technological or political. Rational models and strategic invention are about the diffusion of invention that is easy to diffuse; they are not about technological and policy designs that are aimed narrowly. Steven Jobs told us that he knew that his Ipad had to wait until the market was ready. It wasn't a technological issue, the market had to be ready, and first

to adapt with and to the Iphone. Jobs sequenced his Apple products and by doing so linked invention with innovation decisions. In other words, diffusion studies in the future can and should look not only at the decision to adopt the innovation but also at the link between the invention and the innovation.

The second boundary set by Walker was that between the decision to adopt and the processes of localization, transplantation and translation, that in his model, follow the decision to adopt. Nonetheless, and as we know from the growing literature on translation and localization (Czarniawska-Joerges and Sevon, 1996; Wade, 2001; Acharya, 2004; Frenkel, 2005), the decision to adopt (or not to adopt) an innovation is strongly connected to the expected constraints embedded in the attributes of the adoption. The greater the ability of the actors to flex, adapt and localize the innovation, the greater is the propensity to adopt and the faster is the speed of diffusion. The decision to adopt, in other words, is connected to the attributes of the policy and the goals of adopters, and therefore cannot be studied separately without considerable cost.

The boundaries problem of the diffusion approach directly and indirectly affects the tendency to interlink and embed the diffusion perspective within a broader theoretical discussion in the social sciences generally and public policy in particular. Diffusion is the study of decision making with regard to the adoption of new programs in the context of inter-group effects. Understood in this way, it has wide and immediate implications for, and relevance to, the study of policy change, agenda setting, the politics of attention and of course policy making at the individual level as a behavioral, empirical and theoretical subject of study. This integration was slow to emerge. Walker saw his paper and research as the amalgamation of three different area of study- studies of decision making, reference group theory, and the diffusion of innovations (Walker, 1969, p. 883). One example of a move in this direction is a recent effort to link the punctuated equilibrium literature with diffusion, as undertaken by Baumgartner and Jones (1993) and Boushey (2012), linking periods of incremental change with periods of rapid change. While both incremental changes and more radical changes can be diffused, the diffusion of radical changes can be captured more easily by measures of punctuated equilibrium. Similarly, it makes sense to connect Kingdon's agenda-setting perspective more closely with the diffusion perspective. For

example, this can redraw the lines in a diffusion perspective which is guided by the implicit assumption of a problem looking for a solution rather than the possibility of the alternative. That is, solutions looking for problems in the diffusion process (Rapaport et al., 2009).

Yet another way forward in a richer theory of diffusion is to move away from the homogenization of processes and instead emphasize diversity and heterogeneity. Assumptions about spatial and temporal homogeneity should be relaxed and critically examined (Strang and Tuma, 1993). Diversity and heterogeneity can be captured and conceptualized along many dimensions of the process, including the diversity of policies, actors, channels, context and causal processes. By "diversity of policies" I mean the various attributes that make policies less or more likely to spread, directly or indirectly affecting the likelihood and the rate of diffusion. Gray (1973a) suggested distinguishing policies according to their "have–have not" dimension. Fliegel and Kivlin (1966) studied attributes of innovation such as costs, profitability and risk. More recently Makse and Volden (2011) have examined the likelihood of adoption of successful policies. In doing so they draw on Rogers' identification of five attributes of policy innovation, namely; relative advantage, compatibility, complexity, observability and trialability (Rogers, 1995).

By the "diversity of actors" I mean the study of different categories of participants in the diffusion process. This can be done analytically by distinguishing actors according to their place in the chain of diffusion: for example, internal actors (those within the government that may be considering an innovation); external actors (those in the governments from which policies may diffuse); and go-betweens (those who act across multiple governments (Graham et al., 2013). But this can be also done by examining their function in the diffusion process, for example Mintrom's (1997) study of the role of entrepreneurs or Balla's (2001) study of the role of professional associations. Another useful categorization is the five roles in the diffusion process: model missionaries, model mercenaries, model mongers, model misers and model modernizer (Braithwaite, 1994). At the same time, the idea is to give voice to the interests and attitudes of real people who have varying preferences, goals and capabilities: "without a focus on the policy makers themselves, studies of policy diffusion may miss important aspects of politics" (Graham et al., 2008, p. 684).

By the "diversity of channels" I mean diffusion not only from government to government but also from sector to sector (Jordana et al., 2011) and from one level of government to a another (Volden, 2006). One can also distinguish between two types of channel along which innovations flow: direct (relational) and indirect (nonrelational). The aspect of diffusion most utilized by social scientists is the direct connection or channel between actors in a social system (Strang and Meyer, 1993). Relational models of diffusion highlight information flows between actors through their direct network relations. "The rate at which an item diffuses varies with the level of interaction between actors so that, at high levels of interaction between a prior and potential adopter, there should be higher rates of diffusion of innovations" (Soule and Zylan, 1997, pp. 743–4). By the "diversity of context" I mean the study of diffusion assertion in different contexts, such as the study of the spread of privatization (Levi-Faur, 2003) or of revolutions (Weyland, 2010) in Europe as compared with Latin America or in the 19th century as compared with the 20th century (Weyland, 2012). Finally, by the "diversity of causal effects" during diffusion processes, I mean the varied effects of different causal mechanisms in different stages of the diffusion process (Strang and Soule, 1998; Jordana et al., 2011).

II. Conclusions: From research program to research paradigm?

Jack Walker's study of the diffusion of innovations among the American states is widely considered a seminal study, and for many good reasons. Walker took a theory and a perspective that were highly useful in other social science fields, and applied them in an insightful and forceful way to the study of the public policies of the American states. The innovative part of the study was in neither the explants nor the ***explanandum***. It was an innovation rather than invention – about taking something from one field and applying it in a creative manner in another. The article still stands out among many other useful studies for the creative manner in which it introduces diffusion to our field, using an ambitious data set of non-numerical data. All this was accompanied by a clear and systematic analysis of the data and its correlates, which selectively borrowed and brought together different strands of research that were

developed elsewhere in the social sciences. It took a while for political scientists outside American politics to begin developing a keen interest in diffusion. It took even longer for the sub-field of international relations to adopt it as its own. Nonetheless, we have nowadays a vibrant field of study and according to one count, political science journals published nearly 800 articles about policy diffusion up to 2008 (Graham et al., 2013). More than half of these articles were published in the last decade of that period, when it all essentially started with Walker.

Diffusion studies continue to be influenced and even shaped by the models crafted by Walker, and some of the most interesting new studies published in recent years represent renewed interest in Walker's frame of reference. This renewed interest goes beyond the basic idea of interdependent politics and policy, and touches also on measures of speed and rates of diffusion and the basic mechanisms of emulation and competition as the basic driver of reforms. All the more interesting is the recent revival of scholarly interest in the innovation index and in the creation of big data sets (Boushey 2010; Nicholson-Crotty, 2009; Boehmke and Skinner 2012), as well as the interest of scholars such as Weyland (2009) who reframe diffusion, like Walker, in heuristics of bounded rationality. While Walker could draw only on Herbert Simon's work, the efforts of scholars to reconnect diffusion theories with other theories of the field, and thus to break through the boundaries that were set on diffusion research, are an encouraging sign of future progress in the study of diffusion. What Walker taught us is that interests, behavior, practices and norms are highly interdependent. The likelihood of change in one actor's interests, behavior and practices are positively correlated with the likelihood of change in those of other actors. To the extent that this interdependency is common and widespread, we should take diffusion seriously. This observation applies to innovations but at the same time it applies to any human interaction. If the "interaction effect", which is sometimes called also the "diffusion effect", is relevant well beyond the diffusion of innovations, then Walker's research program of may, develop into a research paradigm. Paradigm that competing with those of rational choice and institutional analysis. In this regard the future of diffusion research seems even more promising than its past and present.

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Endnotes

[1] By July 2013 the paper was among the five most-cited papers in the *American Political Science Review*, according to the Thompson-Reuter, and among the ten most-cited, according to Scholar Google.

[2] Interaction, learning, emulation and transfers in policy and politics have long been noted in passing manner by political analysts. The diffusion of Bismarckian institutions of the welfare state within the West is one example, which is now a commonplace at least for historians of the welfare state (Barker, 1944; Lerner, 1964). The basic units of modern politics, such as the nation state, were diffused (or imported: see Badie, 2000). Nonetheless, the full effect, scope and complexity of the interdependency between actors' interests, behavior, norms and practices was recognized only gradually and the understanding of its full significance for social, economic and political analysis is still constrained

[3] Interview with Walker, Thompson Reuters, Current Currents, 11 Feb 1985. Courtesy of Frank Baumgartner.

[4] On unconscious diffusion, see Lieberson (2000).

[5] For example, if the total time elapsing between the first and the last adoptions of a program was 20 years, and Massachusetts enacted the program ten years after the first adoption, then Massachusetts received a score of 0.5 on that particular issue.

[6] See Interview with Walker, footnote #3.

[7] Unfortunately, this line of reasoning was not followed even though regional diffusion continues to be a vibrant field of study.

[8] Eyeston (1977) provides support which I found in convincing on a number of cases ground to Gray's approach. On the other hand, Savage's (1978) findings confirm Walker's approach. For attempts to reinvigorate the literature on the innovation index see, for example Canon and Baum (1981; Savage (1985). For a more extensive discussion, see Boehmke and Skinner (2012). It might be useful to note that Soule and Zylan (1997) used Walker's index as the explanans rather than the explanandum.

[9] Compound research designs combines cases that vary on selected number of dimensions. For example, the combination of cross-sectoral and cross-national cases in one research design. In this case one would compare both countries and sectors in one or multi-step research design (Levi-Faur, 2004; 2006a/b; Jordana et al., 2011)

[10] For useful surveys the literature, see Meseguer and Gilardi (2009); Gilardi and Füglister (2008); Shipan and Volden (2008); Graham et al. (2013); Palloni (1998); Wejnert (2002); Karch (2007).

[11] For useful surveys of the methodological progress in the study of diffusion, see Berry and Berry (1999, 2007) and Gilardi and Füglister (2008).

[12] "The process by which an innovation spreads is called diffusion; it consists of the communication of a new idea in a social system over time" (Gray, 1973a, p. 1175). In a later formulation diffusion occurs when "an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1983, p. 14).

