Duality squared:

On structuration of Internet governance

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On Wednesday, January 18, 2012, the Internet went dark. In many cases literally. The English Wikipedia, Reddit, Google, Flickr, and others – together over 115,000 websites – presented some kind of banner or landing page to protest two laws proposed in the US Congress. Stop Online Piracy Act (SOPA) and Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act (PIPA) were aimed at curbing copyright and intellectual property violations on websites hosted outside of the US by focusing enforcement at the level of Domain Name System (DNS). What made those protests unique was the very public way in which the technical community confronted policymakers and the public support they were able to garner. This is a vivid illustration of how structure and agency play out in Internet governance through technology, culture, and policy.

The SOPA/PIPA protests illustrate fundamental tension and inherent interdependency between the East Coast code and the West Coast code (Lessig, 2006). Following a US geographic metaphor, the former refers to laws and regulations, and the latter to computer and Web programs and technical standards. This time, the East Coast vs. West Coast tension came to a boiling point, and the Silicon Valley openly and publically engaged the Hill. As John Battelle, co-founder of Wired, put it: "We can't afford to not engage with Washington anymore (…) Silicon Valley is waking up to the fact that we have to be part of the process in Washington – for too long we've treated "Government" as damage, and we've routed around it" (Battelle, 2012). But the West Coast engaging with the East Coast is only part of the story. It is still only a tale of

elites trying to mold structures that preserve their power and further serve their interests (Genieys & Smyrl, 2008).

To complete the picture one has to account for the cultural norms that evolved around the use of the Internet and online civic engagement, as well as for the continuously evolving affordances of the Internet itself and the numerous applications on its edges (Bridy, 2012). For example, on the day of the blackout more than a million messages were sent to the members of Congress via an online tool offered by the Electronic Frontier Foundation, 2.4 million tweets about SOPA were posted on Twitter, and over 4.5 million people signed a petition started by Google (Netburn, 2012; Samuels & McSherry, 2012). Whether it was that public outcry that stalled the SOPA/PIPA legislation or the resources provided by the large technology companies, people speaking out on technology regulation at such scale was at that point unprecedented.

The SOPA/PIPA showdown is a relatively rare yet vivid example of how various actors and structural arrangements play into the constitution of information society. This chapter puts forward a proposal for a duality squared model – a structuration-theory-based framework to analyze the interaction between information technology artifacts, their users, designers, and policymakers regulating information governance, as well as the policy artifacts (regulations and regulatory institutional settings) they create. Conceptually, this proposal is motivated by my interest in the inherent tension between individual agency and micro-behaviors of individuals, and the systemic and structural properties of the environments in which information technologies are created, regulated, and used. Practically, this work is fueled by the ongoing discussions about Internet governance and the growing body of literature on this topic (DeNardis, 2010). Technologies and policies governing how information can be created, used, shared, remixed,

abused, etc. make a particularly interesting case for the analysis of this tension both because of their ubiquitous presence in contemporary society and because of their fundamental importance for the notion of power in social analysis (Braman, 2009a).

Internet, governance, and society.

The politics of the Internet are enacted through the numerous creative and disruptive ways this technology has and is being used. Some scholars argue that that the politics of the Internet are inherent in its design. Laura DeNardis (2009), for example, noted how the engineering of the network embodied choices about civil liberties such as privacy and freedom of speech: "Internet architecture and virtual resources cannot be understood only through the lens of technical efficiency, scarcity, or economic competition but as an embodiment of human values with social and cultural effects" (p. 96). Others focus on the enabling aspects of a network, which, based on libertarian ideas, transcended traditional boundaries of state control of media and communication channels. Mueller (2010) argued that the Internet "changes the polity" by altering "the cost and capabilities of group action" and enabling "new forms of collaboration, discourse, and organization" (p. 5), which in turn allows new forms of transnational governance. The Internet allowed unprecedented political mobilization by realigning the technical basis of what Braman (2009a) labels "informational power"—the informational origins "of the materials, social structures, and symbols that are the stuff of power in its other forms" (p. 26). The ability to innovate, whether politically, commercially or socially, on the edges of the network, shifted the balance of political power between the state and the individual.

Governing the Internet imposes politics on this complex sociotechnical system. Internet governance plays out as politics of control, when it comes to management and distribution of

domain names and IP addresses, and stirs "questions about how access to resources and power over these resources are distributed or should be distributed among institutions, nation-states, cultures, regions, and among entities with a vested economic interest in the possession or control of these resources" (DeNardis, 2009, p. 16; see also Galloway, 2006). Internet governance also plays out as cultural politics in a debate about what values and core principles should be preserved as the network changes. Influencing the technical infrastructure of the Internet means influencing the civil liberties that are enacted through this technology (Braman, 2011).

Today, Internet governance is referred to not only as governance of the technical infrastructure, but also as control of online behaviors, or the very enactment of the liberties it affords (Mueller, 2010). As such, Internet governance also plays out as global politics of domination. Nation states, and regional and international alliances, are competing for the establishment of legal frameworks and public policy practices that preserve the national interests and value systems of the parties involved. The long history of cultural, political, and economic tensions among nation states are reinterpreted within the Internet governance debate, thus making it also a debate about values of democratic participation, economic freedoms, and cultural hegemony (Hart, 2011).

Throughout this chapter, I use a rather broad but well-defined meaning of "governance" as "decision-making with constitutive [structural] effect whether it takes place within the public or private sectors, and formally or informally" (Braman, 2009a, p. 3). This is to differentiate governance from the narrow meaning of government and the conceptually different idea pf governmentality (Braman, 2009a, p. 3). The processes of governance - such as legislation, corporate policymaking or articulation of community norms – are constitutional social forces.

They organize existing social categories and relationships, and they define new social categories within the context of already existing systems of rules and institutions. Thus governance is a continuous and conscious act of social construction or, expanding Fischer and Forester's (1993) definition of policymaking, "…a constant discursive struggle over the criteria of social classification, the boundaries of problem categories, the intersubjective interpretation of common experiences, the conceptual framing of problems, and the definition of ideas that guide the ways people create the shared meanings which motivate them to act" (pp. 1-2). Law and policy both trigger and react to social change, so "with a longer and wider view it is possible to see a specific law developing out of cultural practice, becoming a form of discourse, and ultimately being translated into technology" (Braman, 2009a, p. 3).

Information policy, or more broadly governance of information, adds a layer of complexity to the dualistic relationship between policy and society. First, this complexity stems from the omnipresence of information—it is both a constitutive social force and a fundamental component of governance. Capturing the duality of agency and structure within this dynamic relationship is one of the main challenges in theorizing Internet or information governance. Second, the dualistic relationship between information policy and society is mediated through technology use. Formal Internet-related policymaking, particularly those conducted by governments, often lag behind not only corporate decision-making regarding creation and management of information tools and resources, but also the users' ever-evolving patterns of use. Thus, unpacking the social constructive forces surrounding technology creation, adoption, and use are pivotal to understanding the Internet, information policy, and governance.

There is, however, a disconnect between attempts to conceptualize and critique Internet governance processes and institutions and attempts to conceptualize technology adoption. This disconnect is particularly evident when one is trying to focus on the duality of agency and structure. The literature in Internet governance draws mainly on theories of institutional economics and international relations (DeNardis, 2010; Mathiason, 2009; Mueller, 2010; Singh, 2009) with only a few drawing on science and technology studies (DeNardis, 2009; Flyverbom, 2011; Mueller, Kuehn, & Santoso, 2012). Across the board, the primary focus of Internet governance literature is on *institutions* as political actors or as constraining factors in decision-making processes. Development of technology is typically treated as either exogenous or constrained by institutional forces. Moreover, while individual actors and their actions are acknowledged, the accounts are historical in nature and there is no explicit discussion of agency.

Conceptualizations of technology adoption and use present more nuanced considerations of the duality of agency and structure. Most prominently, Orlikowski (1992, 2000) and then DeSanctis and Poole (1994) successfully adapted the theory of structuration (Giddens, 1984) to explain information technology adoption and change in organizational settings. The structurational model of technology views technology as both a product and a medium of human action, both occurring within institutional context and have consequences for institutional properties. More specifically, while human agents and technological artifacts are viewed as mutually influential, technology is conceptualized as impacting institutional properties of an organization, while those properties impact human agents (Orlikowski, 1992). This is a powerful model that steers away from the exogenous treatment of technology and views it instead as a consequence of human activity.

Missing from the structurational view of information technology is a clear articulation of policy as a structural element that is both a product and a medium of human action, with clear dependency and influence over social structures. We need a theoretical model that brings together the *structural aspects* of policy, technology, and human behavior vis a vis information and information technology, with *individual agency* in shaping these policies, technology, and behavioral norms. In this chapter I attempt to do just that – I develop the duality squared model as a structurational conceptualization of the dualities constructing Internet governance.

Duality of policymaking

A key element of policymaking discourse as social practice is the relationship it encapsulates between the agency of the policy-makers and the social structures that both limit and enable that agency. This is the duality of the policymaking process. Structuration theory (Giddens, 1984) helps conceptualize links between the agency of individual actors and social structures, which the actors reify or alter through their mundane actions. It offers a language to describe the kind of messy constructs that come under the umbrella of information and Internet governance as constitutive processes.

Two core elements of structuration theory are structures and systems. Contrary to the traditional view of structure as an external factor constraining the agency (constructivism), structure in structuration theory is at least partially an internal attribute of the agent, which represents possibilities depicted in human practice and in the agents' memory. Giddens (1984) refers to it as: "structural order of transformative relations," which exhibits "structural properties," i.e. rules and resources that allow "binding of time-space in social systems" (p. 17). On the one hand, he describes structural properties as the rules and procedures of action that are

deeply rooted in our tacit practical consciousness. On the other hand, he views them as resources and power, or as ability of agents to exercise their "transformative capacity" (Kaspersen, 2000, p. 42). Structures can be observed primarily through practice, such as adoption of information technology in organizational (Orlikowski, 2000) or other settings.

Unlike structures, social systems can be viewed as more explicit manifestations of structural relations (Giddens, 1984). They are the "relations between actors or collectives that are organized as regularized social practices and continually produced and reproduced" (Kaspersen, 2000, p. 45). Thus, law and policy are social systems, as are public transportation systems, or any other explicitly organized relationship within a society. Social systems are the formalized or institutionalized versions of actual or desired routines of social practice. This conceptualization supports DeNardis's (2009) argument about technical protocols being a form of public policy insofar as they encapsulate ideas about freedom of expression, privacy, and so on.

Interacting with structures and systems are knowledgeable agents, who are purposeful and intentional in their actions, and who can reflexively monitor their behavior and rationalize their actions (Giddens, 1984). In the context of policymaking, discursive reflexivity—the ability of the agents to reflect on their and others' behavior and explicitly express their knowledge—is particularly interesting. The process of policymaking is a process of discursive reflexivity deliberately aimed at altering the behavior of actors in society. Through discourse, the policymakers affect the public, but in doing so, they also affect the policymaking process itself. Any policymaking process is a system of making decisions that affects the public, and with each decision, policymakers reify the system's structural base regardless of the content of each decision. In Internet governance, this aspect is particularly salient, because institutionalization of

Internet-related policymaking processes is at the heart of the debate. Thus the various processes of developing policy for the Internet reify the emerging structures of Internet governance.

The elements of the theory of structuration—primarily structures, agents, and systems—are inherently tied together and mutually influential. This leads to the central concept in Giddens's theory – the duality of structure – which suggests that the structure is both the medium and the outcome. As such, contrary to the traditional notion of structure, it is not a steady, external factor that limits agency, but a rather constantly changing component that can both limit and enable agency, and that is continuously challenged through practice.

Giddens (1979, 1984) describes three groups of structures that explain the constitution of society. Structures of signification operate through framing or through interpretative schemes and involve the taken-for-granted knowledge assumed to be possessed by competent members of the society. These structures are used to identify typical acts, situations, and motives in a sustainable interaction. Through this interactional skill, which is essentially communicative, agents also recognize the intended and unintended meanings of acts.

Structures of legitimation operate through modality of norms (or rules) based on rights and obligations. If frames are used to identify acts, norms are used to assess how appropriate those acts are. This in turn constitutes the duality of normative structures, because agents interpret normative structures, and each normative assessment has an array of behaviors it can evoke. As such, acceptance of norms is based on pragmatic assessment of normative and institutional alternatives. In other words, the agents have room "to produce a normative order as an ongoing practical accomplishment" (McLennan, 1997, p. 355).

Structures of domination operate through mobilization of power resources allowing

agents to secure their interpretation and normative claims, in light of potential opposition from

others. Such resources include organizational hierarchies, technical expertise, timetables and

schedules or anything that exerts control over the time and space dimensions of social life. Such

resources also include interactional skills "involving high degrees of discursive penetration into

the structures of signification and legitimation (such as the ability to argue successfully through

the use of superior rhetorical skills or skills at normatively justifying one's position)"

(McLennan, 1997, p. 356).

The process of policymaking works through enacting these three types of structures

across time and space, and it is also an explicit attempt to systemize a relationship between these

three types of structures in a particular domain. This relationship is manifested in policy

discourse as a form of social practice. For Internet governance, what matters is not only the

substantive topics (e.g. management of Internet names and numbers), but also how decisions

regarding these resources are made and how the correct or the fair way to make these decisions is

portrayed. A policy, or a policy arrangement, offers what Pinch and Bijker (1987) call a

"rhetorical closure," meaning "whether the relevant social groups *see* the problem as being

solved" (p. 44, emphasis in the original).

However, policy and the process of policymaking are never static. Building on

Orlikowski's (2000) argument about the duality of technology, policy and policymaking

processes, are enacted through practice. As Giddens, explained, "[h]uman actors are not only

able to monitor their activities and those of others in the regularity of day-to-day conduct; they

are also able to 'monitor that monitoring' in discursive consciousness" (Giddens, 1984, p. 29).

Policymaking process, thus, is an exercise in discursive reflexivity; it is a conscious attempt to encode norms and values in texts, an attempt to reflect, debate, and decide what is normative and what is not so it can be made explicit (see Braman, 2009b, 2011 for a specific Internet governance example). In this context, we see the policymaking and policy-debating spacesas the sites where agency is explicitly exercised and where structures of decision-making are crafted.

As a discursive space, a forum that is explicitly dedicated to policy deliberation is an institutionalized form of modalities of structuration (Macintosh & Scapens, 1997). "Actors," according to Giddens (1984), "draw upon the modalities of structuration in the reproduction of systems of interaction, by the same token reconstituting their structural properties" (p. 28). Figure 1, reprinted from Giddens (1984, p. 29), represents the duality of structure as interconnectedness between the structures and their practice; practices that are often institutionalized in organizational settings. A non-binding policy deliberation forum, for example, formally focuses on structures of signification, but those "always have to be grasped in connection with domination and legitimation" (Giddens, 1984, p. 31).

A policy discursive space, as primarily a modality of interpretive scheme, exists as a reification of structures of domination and legitimation. At the same time it reproduces and reconstructs these structures through policy discourse as a social structure. More generally, according to Giddens (1984), "[w]hen social systems are conceived of primarily from the point of view of the 'social object', the emphasis is placed on the pervasive influence of a normatively coordinated legitimate order as an overall determinant of or 'programmer' of social conduct" (p. 30).
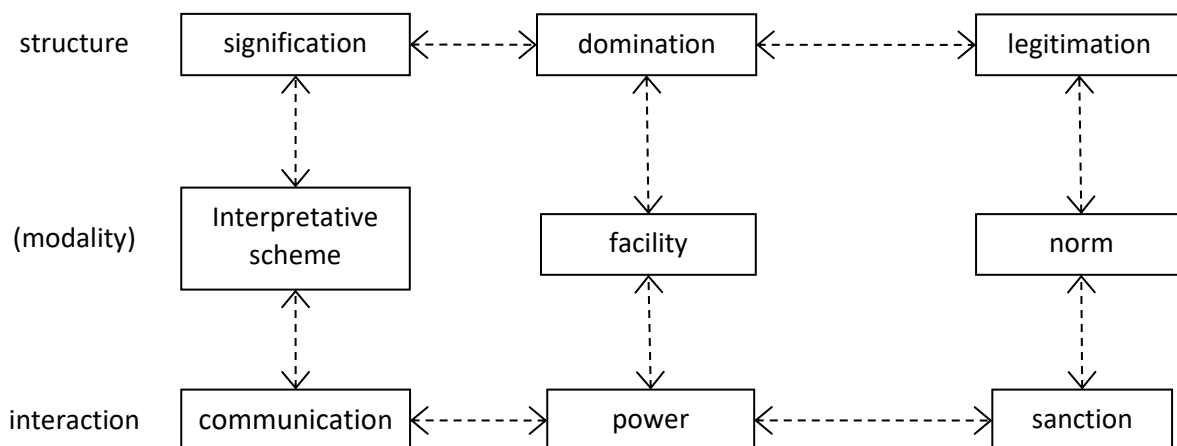
Figure 1: Dimensions of the duality of structure
(Reproduced with permission from Giddens, 1984, p.29)

Building on the notion of duality I propose conceptual framework for explaining the relationship between the process of policymaking and its outcome. My conceptualization intentionally builds on the work of Orlikowski (1992), as I view it complimentary to her modeling of the duality of technology. The duality of policymaking model, accounts for four types of influences between policymakers as agents, policy as a social system, and the context of policymaking, which includes other social structures where the policymakers operate and the policy is being implemented. More specifically, it views policy as both an outcome of human activity, such as international policy debates and negotiation, and as a factor that facilitates and constrains policymaking activity through the existing structures of signification, legitimation, and domination. It accounts for the structural conditions of policymaking, such as national and institutional identities, perception of technology, organizational settings of the debate, and so on, and at the same time acknowledges the influences of implementation of policy on those and other social structures.

Viewing policymaking or governance processes through the lens of structuration theory highlights the role of policy discourse – or structures of signification – in shaping the way we, as a society, come to think about information and communication technologies and their social roles. In this view, policy debates constitute instances of deliberative attempts to produce social systems through discursive reflection on competing social structures as manifested by the various stakeholders. As previously noted, in the case of information and communication policy, the social systems in question deal with socially constitutive powers, which are central to the processes of challenging and reproduction of social structures (Banks & Riley, 1993; Braman, 2009a; Leeuwis, 1993).

The work of Orlikowski (1992) and others (such as: Borg, 1999; Leeuwis, 1993), helps us to see how the argument about the duality of technology can be extended to information and communication technology policy. Similar to the creation of technology itself, technological policy is deliberately and consciously constructed by actors (policymakers) working in a given social context. However, policy is also socially constructed outside of that particular context through the different meanings actors (the public) attach to the technology and the various interpretations of the technological policy they emphasize and utilize in their daily lives. Thus, the process of constructing media, information, and communication technology involves both the designers and the users—all of them translate policy into practice.

Duality squared

Pulling together the two notions of duality – that of policy and that of technology – offers a comprehensive conceptual framework for understanding the dynamics of Internet governance. I label this the *Duality Squared* model. Introducing this model requires one last conceptual

exercise. We should note that notions of structures of signification, legitimation, and to a degree domination, are inherently communicative; it is through communication of and about social structures that human agents exercise their power resources (Bourdieu, 1991; Fairclough, 2001). Yet, although policymakers, especially in the field of information and communication policy, are explicitly involved in negotiating those structures and their relationships, ordinary citizens, who are not directly involved in policy debates, enact those structures through communication processes. To reiterate, "issues involving information and communication define the categories themselves and the relations enabled or permitted within and between them" (Braman, 2009a, p. 19). Since much of contemporary communication is mediated through technology, the process of negotiating the meaning of that technology defines social structures and is an influential factor in the constitution of society.

To describe the duality of technology within the Duality Squared model, one needs to focus on artifacts that constitute our mundane media environments. Building on Orlikowski's (1992) we can still describe information and communication technology as both a product and a medium of human action, but at a macro level, beyond the scope of a single organization. Here, technology as a medium is where structures of signification, legitimation, and domination are enacted and through which power resources are exercised. In turn, mundane uses of technology occur under social structural conditions of interaction with technology, such as cultural norms and perceptions of technology. Finally, there are social structural consequences of interaction with technology, such as exposure to alternative discourse, new venues for creative expression, or lower cost of collective action.

Linking this interpretation of the duality of technology with the structurational model of policymaking produces the Duality Squared model depictured in Figure 2. In addition to the relationships presented above this model also includes policy as an outcome of human activity, such as international policy debates and negotiation, and as a factor that facilitates and constrains policymaking activity through the existing structures of signification, legitimation, and domination. It also accounts for structural conditions of policymaking, such as nation and institutional identities, perception of technology, etc. and captures the influences of implementation of policy on other social structures.

The governance processes of information and communication technologies constitute two mutually reinforcing dualities – thus duality squared. On one facet of this duality, policymakers react to unintended consequences for social structures and institutions created by diffusion and adoption of new technologies; at the same time they set the agenda and provide guidance for future technological developments that impact social structures and institutions. On the other facet, while working on policy and regulations that mediate our abilities to communicate through technology, policymakers are acting within the limitations of the same social structures and institutions that are being influenced. Unfortunately, the two-dimensional representation used in Figure 2 does not adequately represent the complexity of the model. We must bear in mind that policy makers and policy discussants, who are the primary actors examined in this framework, are also human agents who interact with both the social structures and communication technology.
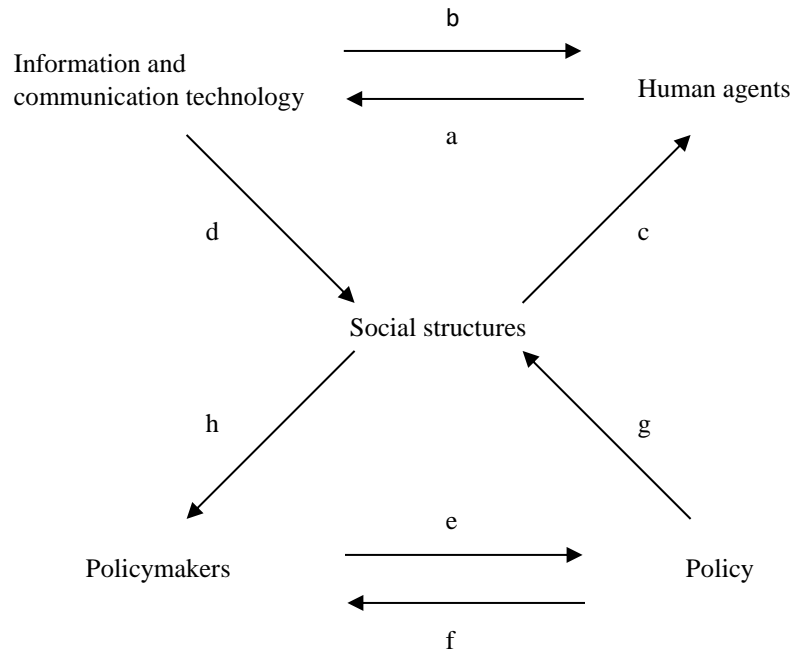
Information and
communication technology

b

Human agents

a

d

c

Social structures

h

g

Policymakers

e

Policy

f

Figure 2: The Duality Squared model

(a) Information and communication technology as a product of human action.
(b) Information and communication technology as a medium of human action, specifically a medium where structures of signification, legitimation, and domination are enacted and through which power resources are exercised.
(c) Social structural conditions of interaction with technology, such as cultural norms and perceptions of technology.
(d) Social structural consequences of interaction with technology, such as exposure to alternative discourse.
(e) Policy as an outcome of human activity, such as international policy debates and negotiation.
(f) Policy as a factor that facilitates and constrains policymaking activity through the existing structures of signification, legitimation, and domination.
(g) Structural conditions of policymaking, such as nation and institutional identities, perception of technology, etc.
(h) Influences of implementation of policy on other social structures.

The Duality Squared model offers a flexible framework that can be applied to different domains of technology governance and policymaking. For example, this framework would be particularly interesting and suitable for application in the sphere of Internet governance, due to the high complexity and unique position of this sphere in terms of informational power. The model allows us to acknowledge that policy deliberation spaces are but one layer of Internet governance decision-making; in particular decisions are also made in other settings, such as the corporate world or communities of tech-activists. The model also brings to forefront the time- and space-related contexts of policy deliberation; this is an important aspect, because once developed and made public, policy discourse tends to become reified and institutionalized (as laws, regulations, standards, programs, etc.), thus losing its connection with the human agents that constructed it or gave it meaning; as such, policy discourse can come to appear part of the objective, structural properties of the society.

On the one hand, the Duality Squared model is general enough to allow discussion of broad social issues, such as those feeding the agenda of policymakers. By placing communication as the social activity at the center of our discussion, the Duality Squared model allows to account for two substantively different yet mutually dependant relationships – one focused on policymakers and the other on human agents not directly involved in policy debates. On the other hand, the Duality Squared model is relatively specific and captures relationships that are inherently communicative and can be applied to a particular policymaking or policy-discussing setting focused on a specific information and communication technology (e.g. SOPA/PIPA, net-neutrality, multistakholderism, etc.).

Concluding remarks on structuration of Internet governance

The proposed structurational view of information policymaking is a step toward a comprehensive conceptual framework of information governance through regulation of technologies that manage its flow. The emphasis on the communicative nature of enactment of structures of signification, legitimation, and domination further blurs the distinction between policymaking and governance as determinants of questions to be asked. Instead, viewing both activities as exercises in discursive reflexivity allows asking comparative questions about potential impact of binding and non-binding, private and public, technical and social policy discussions on social structures and on governmentality. In other words, this may be a particularly suitable framework for the study of bottom-up and multi-stakeholder processes such as Internet governance.

The SOPA/PIPA example that opened this chapter is a good illustration of the double duality in action. The Double Duality model unveils that the divide between the East Coast and the West Coast codes goes beyond the literary meaning of code as two types of end product. Instead the gap is about how those, who chose to engage in SOPA/PIPA debate, use and perceive the Internet in fundamentally different ways. For policymakers in Washington, DC, for technology designers in Palo Alto, CA, and for Internet users in the US and elsewhere, the Internet evokes different modalities of structuration. Starting with the most fundamentally different views of the Internet as either a vehicle of commerce or a vehicle of creative work and free speech, through debate about the legal and technical facilities for carrying out proposed regulation, the standoff on January 18, 2012 suggests that governance of the Internet requires

consent, or at least a commonly shared understanding of the Internet, by the various actors engaged in its shaping through regulation, design, and use.

The Duality Squared is neither a predictive model in the positivist sense, nor a critical theory offering a normative judgment. It is a prism helping form questions about the dynamics of policymaking processes and the way they may alter social structures pertaining to communication. For example: How does policy establish meaning and norms of technology and at the same time reify assumptions about technology? How previously non-normative views are made normative in the process of policy deliberation? What forces lead to systematic obfuscation of what may have been considered normative? Importantly, viewing policymaking as a duality also allows us to ask questions about the actual agency of the policymakers: How do policymakers act as carriers of normative structures across different fora, geographic locations, and institutional settings? How often do public policymakers actually reflect on and rationalize activities and meanings that have already become commonplace, or do they accept and embrace meanings offered to them by private actors? What role do the structural properties of the policymaking process itself play, compared to the individual attributes of the agents in terms of their interpretation of priorities, opportunities, and constraints?

The Duality Squared model put forward in this chapter offers a conceptual map for a researcher trying to unpack the power dynamics that shape information policy, technology, and practices. The model tries to provide a unified framework that would account for the multiplicity of factors in play, focuses on the dynamics of interaction, and steers away from the a dualistic view of social relations. The danger, of course, is a model that is too generic with limited explanatory power. Yet, as demonstrated by Orlikowski's (1992) and DeSanctis and Poole's

(1994) adaptations of the theory of structuration, this conceptualization of duality is flexible

enough to be applied at various levels of analysis and specificity.

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