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Abstract

This paper proposes a new research perspective on resistance to information systems (IS) change. Drawing upon a power lens and complementing it with the organizational literature on resistance, we develop an integrative framework that conceptualizes resistance at three levels: 1) the non-compliance behaviors, 2) the meanings and norms that resisters contest and enact, and 3) the technical artifacts that resisters bring into their acts. By mapping existing IS literature on resistance onto our framework, we identify a bias of the literature towards a refusal view of resistance. That is, IS literature has been mainly concerned with resistance as a refusal behavior –i.e. refusal to a new system, to changes in the working practices, to loss of status quo– by which resisters attempt to neutralize the actions from the proponents of IS change. Yet our framework enables us to depict resistance not only as refusal but also as generative. Whilst a focus on resistance as refusal pays attention to the acts by which resisters aim to block the outcomes intended by the proponents of IS change, the analysis of the generative potential of resistance considers two additional aspects. First, it involves looking at how resisters challenge the meanings that proponents assign to the IS change –i.e. assumptions about the technology, goals and role of actors in the change process. Second, it entails analyzing how (human) resisters and technical artifacts become intertwined in the acts of resistance and how those socio-technical assemblages instigate disciplinary effects to the proponents of IS change. In other words, studying the generative potential of resistance involves viewing resistance as a socio-material accomplishment that may transform the established order through structural and radical changes.

Keywords: Resistance, generative resistance, IS change, power, circuits of power, socio-material.

1   Introduction

The IS literature has long and extensively acknowledged that IS change[1] is permeated with resistance. A prevalent research stream, which fits in with the practitioner literature, views contestation and resistance as counterproductive; that is, a deviation from the formally planned trajectory of IS change (Kim and Kankanhalli, 2009, Guha et al., 1997, Sutanto et al., 2008, Senn, 1978, Jiang and Muhanna, 2000). These accounts usually treat resistance as an anomaly that has to be curbed in order to avoid failure. In addition, resisters –the recipients of IS change– are usually regarded as deviants who generate problems instead of offering solutions or being positive. Another research stream regards resistance as normal and constitutive of IS change and studies why and how resistance behavior occurs (Joshi, 1991, Lapointe and Rivard, 2005, Markus, 1983, Ferneley and Sobreperez, 2006). This stream reports diverse resistance behaviors and conceptualizes them as a result of the perceived threats that emerge from the interaction among several antecedents –i.e. object and subject of resistance, initial conditions, and perceived threats (Lapointe and Rivard, 2005). Yet the perspective on resistance of this stream is still biased towards the proponents of IS change.

The dominant view that these two research streams have of resistance is that of a *refusal behavior* against an IS change initiative. For instance, resisters refuse a new system (Klaus and Blanton, 2010), changes in the work practices and processes (Ferneley and Sobreperez, 2006), or the loss of status quo (Kim and Kankanhalli, 2009). Due to this bias towards the refusal behavior of resistance, both streams have focused on explaining and predicting resistance and suggesting strategies so that change agents can overcome it. Comparing with the conceptual developments in other managerial literature, this dominant view has two shortcomings. First, existing frameworks about resistance in the IS literature do not allow researchers to study the capacity of resistance to be potentially fruitful for the change itself (Ford et al., 2008), to fundamentally transform the established order (Courpasson et al., 2011), and to produce technological innovations (Kavanagh, 2004). Second, and linked with the first shortcoming, this mainstream view of resistance focuses on the physical acts by which IS change is contested. Yet it overlooks the meanings and material arrangements that are intertwined with those acts of resistance, as well as the organizational changes that resisters produce. In this paper we propose the concept of *generative resistance* to refer to this resourceful and socio-material aspect of resistance that is able to produce organizational change.

In order to theoretically ground the refusal and generative facets of resistance to IS change, we draw upon the sociological work of Clegg (1989) on power and the work of Courpasson et al. (2011) and Fleming and Spicer (2007) on organizational resistance. The Clegg's framework of the circuits of power helps us to conceptualize resistance at three levels: episodic, which deals with the resistance behavior; social integration, which considers social factors such as meanings and social norms; and system integration, which considers the materiality as the source of resistance. In parallel, the typology of resistance suggested by Fleming and Spicer (2007) helps us to propose a rich framework of generative resistance. We claim that the generative facet of resistance broadens the refusal one by highlighting its transformative capacity. We believe that a focus on the generative potential of resistance might account for unexpected socio-material innovations in organizing. In that respect, we suggest that by including the management of meanings and the role of IT artifacts in their resistance accounts, and hence viewing resistance as a socio-material accomplishment, IS scholars would contribute to the management and organizational literature.

This paper is structured as follows. We first build the argument for drawing upon a power lens to study the acts of resistance. We next develop a theoretical framework which integrates the power lens

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[1] IS change covers "the generation, implementation, and adoption of new elements in an organization's social and technical subsystems" (Lyytinen et al. 2008, p.590).

with the various models of resistance identified in the literature. We illustrate the usefulness of the theoretical framework by mapping existing IS literature on resistance into it. We then discuss the focus of existing IS literature and present two perspectives on resistance: refusal, which has been dominant in the literature, and generative. We follow by characterizing generative resistance. Finally, we end with the contributions and some concluding remarks.

2 Power and resistance

2.1 Conceptualizing resistance

Scholars in the field of sociology (Clegg, 1989; Foucault, 1990; Weber, 1978) and organizational studies (Courpasson and Dany, 2009; Courpasson and Golsorkhi, 2011; Fleming and Spicer, 2007) have shown that power and resistance are opposing forces that are closely knitted together. For instance, Weber defines power as: "the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance" (Weber, 1978, p.53). Foucault (1990) goes even further by depicting power and resistance as standing in a cyclical relationship: "Where there is power, there is resistance, and yet, or rather consequently, this resistance is never in a position of exteriority in relation to power." (p. 95). That is, the openings for resistance derive from the exercise of power (Ewick and Silbey, 2003), and hence, the possibility of resistance to change is integral to the exercise of power by the proponents of change.

In short, resistance represents a reactive response that attempts to neutralize some decisions or actions from the proponents of IS change. In that sense, resistance involves firstly, the unveiling of what was taken for granted –i.e. expectations or situational power relations– by the established order –i.e. proponents of a new system–, and secondly, questioning that taken for granted and subverting it (Courpasson and Dany, 2009, Clegg et al., 2006). Such unraveling of the taken for granted sometimes enables the resisters sneak into the power structures and find a way to shift them (Ewick and Silbey, 2003). Accordingly, resistance is not only a reaction to power, but actually shapes the exercise of power and the power relations aiming for structural and radical change.

2.2 The circuits of power

Since power is intrinsic in the conceptualization of resistance, we will, as others in the IS literature have previously done (Doolin, 2004, Sayer, 1998, Smith et al., 2010), draw upon a power lens to investigate resistance. In particular, we rely upon the "circuits of power' (Clegg, 1989). The framework of the 'circuits of power' (see Figure 1) is already familiar to the IS field. It has been used to study the creation, development, adoption and accreditation process of information security standards (Backhouse et al., 2006, Smith et al., 2010), or the institutionalization of information systems (Silva and Backhouse, 2003).

In the framework, power is "understood analytically as moving through three distinct circuits, carried always by the organization of agencies" (Clegg, 1989, p.239). These three circuits –episodic, social integration and system integration– are interdependent and represent three types of power –causal, dispositional and facilitative. Power consists in the achievement of obligatory passage points (OPPs) for others –conduits "through which traffic must necessarily pass" (Clegg 1989, p.205). The achievement of OPPs results in the ability to organize other agents into an advantageous stabilization of power relations. For instance, the literature has widely acknowledged that inter-organizational standards are usually OPPs for those firms that adopt inter-organizational information systems (Markus et al., 2006, Rodon et al., 2008). Accordingly, those firms that control the OPPs are in powerful position in the sense that they can shape others' adoption.

The episodic circuit is concerned with causal power, which refers to the exercise of power that is linked to the day-to-day actions in which "an [agency] A can get a [agency] B to do something that B would not otherwise have done. Alternatively, we might say that A can get B not to do something that

B might reasonably have been expected to do" (Clegg, 1989, p.217). That is, causal power is about behavior and practices, and it is premised on resource control (Clegg, 1989). In particular, the power of an agency is realized through the management of standing conditions by which the resources needed by other agencies are controlled. The outcome of episodic power is that the recipients of IS change follow the instructions from the agents of change (Silva, 2007).

The second circuit of power is concerned with dispositional power, which refers to the inherent capacities that an agent has, irrespective of whether or not she exercises those capacities. Dispositional power exists at a deeper level than episodic level; particularly, those agency's capacities exist in the rules of meaning and membership underlying the social relations. This includes formal status of the organization "that place A in a position to tell B what to do" (Silva and Backhouse, 2003, p.301). In addition, this circuit also concerns for instance, the meanings that proponents of the system –the actors who initiate and are in charge of the IS change– enact in legitimating the IS change, and the roles that the recipients of change are expected to play.

The last circuit is that of system integration and involves facilitative power. Facilitative power is exercised through material conditions and techniques of production and discipline leading to domination. For instance, this concern the set of disciplinary measures that would be deployed in case recipients of IS change deviate from their expected roles (Silva, 2007). Facilitative power is concerned with the empowerment or disempowerment of agencies' capacities through the reproduction or creation of new OPPs. Facilitative power is a major source of variation and change in the framework, particularly when the material conditions of production and discipline are altered –for instance, through the new design of a system, or through the setting up of an IT standard– (Silva and Backhouse, 2003, Backhouse et al., 2006).

Figure 1. Circuits of power framework (Clegg 1989)
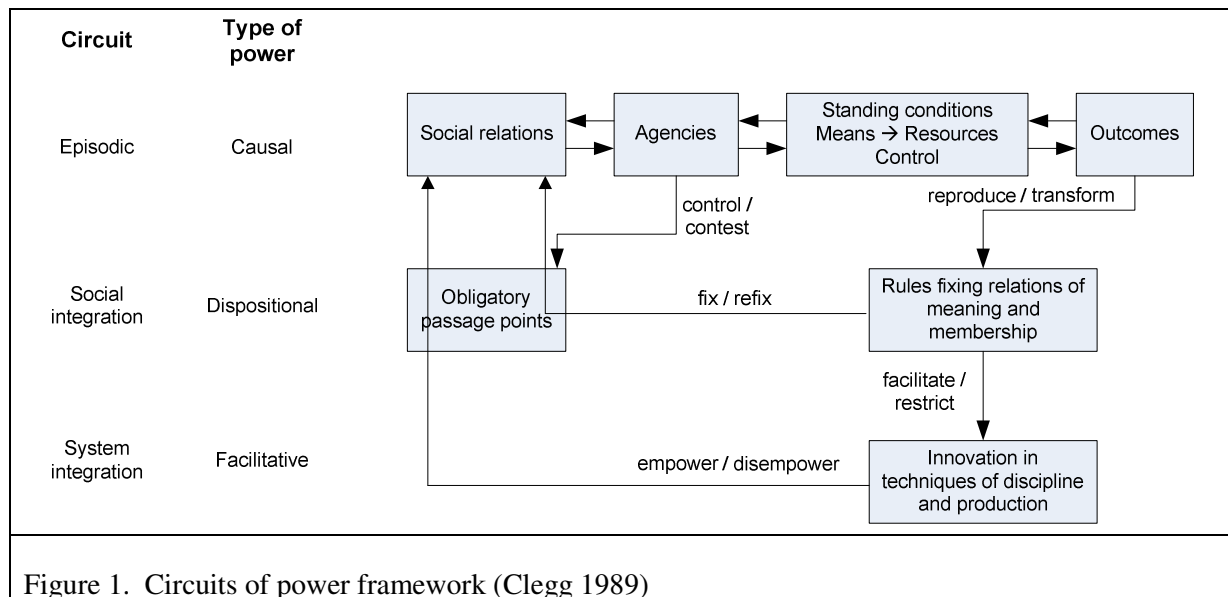
3   The circuits of resistance

Clegg (1989) posits that "resistance . . . will tend to be pervasive. Authorities...will rarely if ever be resistance free and passive relays" (p.101), and he adds "power and resistance stand in a relationship to each other. One rarely has one without the other." (p.208). Clegg (1989) defines resistance as "the efficacious influence of those subordinate to power" (p.208) and distinguishes two types of resistance. On the one hand, there is "resistance to the exercise of power which leaves unquestioned the fixity of terms in which that power is exercised. It merely resists the exercise not the premises that make that exercise possible. In this respect resistance is compatible with reification and the exercise of power.

What is reified is the fixity of power terms, the representations which constitute it as such, centred on particular passage points." (Clegg, 1989, p.207). On the other hand, "under rare conditions … resistance to power may consolidate itself as a new power and thus constitute a new fixity in the representation of power, with a new relational field of force altogether." (Clegg, 1989, p.207).

If power and resistance are opposing forces, the former always preceding the latter, then it is plausible that different forms of resistance correspond to different types of power. However, while the 'circuits of power' provides a detailed description of power at each circuit, it is limited in its development of the different modes of resistance. In particular, as we have just noted in the previous paragraph, Clegg describes two kinds of resistance but he does not explicitly link them to the three circuits. Since our focus in this paper is on the operation of resistance, we verify the suitability of the 'circuits of power' to study resistance by integrating in it the various forms of resistance identified in the organizational literature (Courpasson, et al., 2011; Fleming and Spicer, 2007). We next explain how resistance operates at each circuit and illustrate each form of resistance with examples from the IS literature (see Table 1 for a summary of the forms of resistance at each circuit). In addition, we formulate a set of research questions (see column 3 in Table 1) in order to guide research on resistance at each circuit.

3.1   Resistance at the episodic circuit

Causal power "will invariably be accompanied by resistance" (Clegg, 1989, p.215), as indicated by the arrows pointing to the left-hand side of the episodic circuit (figure 1). At this circuit, whereas the As are expected to control the OPPs, Bs' resistance lies in the contestation of those OPPs. Resistance is around the activity that an agency [A] wants another agency [B] to do. B's capacity to resist depends on the standing conditions of access to means that activate resources. That is, the standing conditions delimit what recipients of IS change can do.

Resistance at this circuit entails *non-compliance*: B rejects the directives of A by not directing behavior in the way that A desires. For instance, recipients of IS change avoid using or make a perfunctory use of a new system. Lapointe and Rivard (2005) show how in the implementation of an electronic medical record system in an acute care hospital "resistance behaviors mostly took the form of inaction and lack of interest, as physicians did not participate in the training sessions and put little effort into learning to use the system" (Lapointe and Rivard, 2005, p.473). Such form of resistance aims to block the outcomes of causal power (the actions that A wants B to do) "by undermining the flow of domination rather than by changing it" (Fleming and Spicer, 2007, p.32).

Depending on the intensity of the non-compliance, resistance at this level can be more passive or active. Passive non-compliance entails that B rhetorically supports the directives from A, but then continues to behave the same. On the other hand, with active non-compliance, B rejects to follow the commands of A. For instance, users can resist the adoption of certain working practices through the sabotage of the hardware and software of the system (Ferneley and Sobreperez, 2006) or the sabotage of the data entry (Marakas and Hornik, 1996). In these examples, non-compliance has, first, a material component –that is, resisters use material objects in their acts of resistance–, second, it is visible, and third, it "may involve an escalation of opposition in which it is A's response what is targeted by the resistance" (Fleming and Spicer, 2007, p.33).

3.2   Resistance at the social integration circuit

As an opposing force to the dispositional type of power, resistance at this circuit takes a more discursive approach. It focuses on resisters' contestation and production of rules of meaning and membership. Given that the control of OPPs relies on fixing meanings and relations of membership and "the securing of particular interpretations of what the rules are" (Clegg, 1989, p.225), resisters will seek to contest and shift those rules and by doing so, reconfigure existing OPPs or create new ones. We have found in the literature at least four forms of resistance that match in this circuit of resistance: *non-acknowledgement, escape, voice, and replacement*.

The first form of resistance involves not acknowledging the rules of meaning and membership that dominant actors assign to IS change. For instance, users checking off an option from the system because they consider it has no value for their work (Lapointe and Rivard, 2005), users not recognizing the new roles they are supposed to play in the new system (Doolin, 2004), or users not accepting a technology when it makes them take a new role (Doolin 2004; Sayer, 1998).

The second form of resistance entails escaping the meanings and discourses adopted by proponents of the IS change. For instance, resisters can escape through cynicism (Doolin, 2004, Selander and Henfridsson, 2011) or humor (Lapointe and Rivard, 2005). Selander and Henfridsson (2011) argue that "cynicism might be beneficial to the individual by providing a space where he or she can escape what he or she perceives as incompetent managerialism" (p.22). However, escaping the meaning ascribed to the IS change can in fact, produce some contradictory outcomes. In particular, when proponents of the IS change perceive that through escaping resisters disengage from the IS change process, then escaping can help reify rather than undermine the same rules resisters disagree with (Fleming and Spicer, 2007).

Resistance as voice involves that resisters let them be heard by the proponents of the IS change in order to question and/or change certain rules of meaning and membership in favor of the former (Fleming and Spicer, 2007). Resisters voice claims and interests that are not taken into account by proponents of the IS change (Courpasson, et al., 2011). For instance, resisters openly question and try to influence and get involved in the decision making process by reframing the meanings assigned to the IS change (Doolin, 2004; Hirschheim and Newman, 1988; Sayer, 1998). Through voice, resisters can also expect to gain legitimate representation (Fleming and Spicer, 2007).

Finally, resistance as replacement is a radical form of resistance in which resisters aim to supplant and replace those in a dominant position with an alternative message (Fleming and Spicer, 2007). In the replacement, the object of resistance is not the system or the rules of meaning but the same advocates of IS change. For instance, Lapointe and Rivard (2005) note how after a major incident involving patients in the implementation of an electronic medical system at a university hospital, physicians gave the general manager who had promoted the implementation of the system an ultimatum, thus delegitimizing his role in the implementation.

3.3   Resistance at the system integration circuit

The circuit of system integration also "functions as a potent source of resistance to the stabilization of existing memberships and meanings by generating new techniques of production and new modes of discipline, which, if they are not already present within existing rules of practice, have the capacity to transform these." (Clegg, 1989, p.224). We qualify the resistance occurring at this circuit as productive to mean that resisters are able to enroll or produce artifacts that enable them to tilt in their favor the IS change.

Through productive resistance, resisters will empower themselves and will instigate disciplinary effects on the proponents on IS change through the inscription of codified knowledge that serves their interests –i.e. laws, norms, standards– in IT artifacts. Productive resistance can be exerted by promoting new IT artifacts –i.e. technologies, designs, or procedures– or new arrangements of existing IT artifacts –i.e. a change of an IT architecture– that will play a role in the IS change process by opening up new OPPs which proponents of IS change will be forced to consider. Ultimately, the effectiveness of resisters will depend on their ability to contest, shape and change the OPPs that proponents of IS change want to establish and control.

For instance, Sayer (1998) shows how middle management of an Australian public sector organization resisted to a business reengineering project that required them to "give up their positions of control in organizational communication and empower lower echelon staff" (p.255). Middle management banded together against the reengineering vision of the principal management and tilted in their favor the reengineering project by creating a protocol to be placed on cc:Mail that allowed them to retain their control over information.

Circuit of resistance	Forms of resistance	Specific research question related to resistance
Episodic circuit	*Non-compliance*: B (a resister) rejects to comply with the directives of A by not directing behavior in the way that A (the proponent of IS change) desires (i.e. use a system).	* How do the recipients of IS change react to it? (accept/refuse to do what proponents of IS change ask them to do) * What IT artifacts do the recipients of IS change bring into/exploit in their acts of resistance? * Which are the OPPs that recipients of IS change accept, contest, or control?
Social integration	*Non-acknowledgement*: resisters do not acknowledge the rules that proponents assign to IS change. *Escape*: escaping –for instance through cynicism or skepticism– the meanings and discourses adopted by proponents of the IS change. *Voice*: resisters let them be heard by those in power in order to challenge certain rules of meaning and membership attributed by the former as well as to enact new rules. *Replacement*: resisters supplant and replace those in a dominant position with an alternative message.	* Which rules that proponent actors assign to the IS change (i.e. goals and vision of the project, assumptions about IT, roles of actors) do resisters challenge, and how do they challenge them? * Which new rules do the recipients of IS change enact to further their interests? * What OPPs do the recipients of IS change contest or reinforce?
System integration	*Productive:* resisters are able to instigate disciplinary effects to the proponents of IS change by means of new technologies, designs, or procedures.	* What material agency do the recipients of IS change bring into their acts of resistance and how do they challenge the extant rules of domination? * Which socio-material assemblages are formed and what disciplinary effects do those assemblages have on the proponents of IS change? * What OPPs do the recipients of IS change re-fix, reconfigure, or create?

Table 1: The circuits of power and the corresponding forms of resistance

4   Mapping the IS literature on resistance onto the framework

In order to illustrate the usefulness of the integrative framework presented in Table 1, we review existing IS literature on resistance and map it onto the framework (see Table 2). We started our search of papers in the following journals (the basket of 8 plus Information & Organization, and Information and Management): MIS Quarterly, Information Systems Research, Journal of Management Information Systems, Journal of the Association of Information Systems, European Journal of Information Systems, Information Systems Journal, Journal of Information Technology, Journal of Strategic Information Systems, Information & Organization, Information and Management. We first searched for articles at EBSCO database that contained the word "resistance" either in the title or in the keywords of the papers. We obtained 19 articles. In a second step, and after a first reading of all the papers, we added two articles (Hirschheim and Newman, 1988; Martinko, et al., 1996) that were widely cited by the initial list of articles even though they were not part of the initially chosen journals. After a first analysis of these 21 papers from the list, we removed seven papers (Gill, 1996; Jiang and Muhanna, 2000; Joshi, 1991; Kim and Kankanhalli, 2009; Klaus and Blanton, 2010; Senn, 1978; West and Mullins, 1981) because they did not focus on how resistance is exercised but on the antecedent conditions of resistance behaviors. We finally analyzed 14 papers (see Table 3).

5   Analysis

Given that our aim was to map these papers onto the framework we initially analyzed them according to two dimensions: the definition of resistance and the resistance behaviours reported (see columns 2

and 3 in Table 3). We then coded each instance of resistance in the papers according to the circuit of resistance involved. We did so guided by the research questions presented in column 3 of Table 1. Next we categorized each of those instances of resistance based on the 6 forms of resistance of our framework (column 2 in Table 1): non-compliance, non-acknowledgement, escape, voice, replacement, and productive. We discuss these results (see Table 2) by characterizing existing IS research on resistance and developing new insights and new research directions.

Circuit	Forms of resistance	Resistance reported by prior IS literature	Research perspective	
Episodic circuit	Non-compliance	(Alvarez, 2008; Bhattacherjee and Hikmet, 2007; Doolin, 2004; Ferneley and Sobreperez, 2006; Hirschheim and Newman, 1988; Lapointe and Rivard, 2005; Marakas and Hornik, 1996; Markus, 1983; Martinko, et al., 1996; Meissonier and Houzé, 2010; Newman and Noble, 1990; Sayer, 1998; Selander and Henfridsson, 2011; Smith, et al., 2010)	Refusal	
Social integration	Non-acknowledgement	(Doolin, 2004; Hirschheim and Newman, 1988; Lapointe and Rivard, 2005; Markus, 1983; Sayer, 1998; Smith, et al., 2010)		
	Escape	(Doolin, 2004; Lapointe and Rivard, 2005; Selander and Henfridsson, 2011)		
	Voice	(Doolin, 2004; Hirschheim and Newman, 1988; Lapointe and Rivard, 2005; Sayer, 1998)		Generative
	Replacement	(Lapointe and Rivard, 2005)		
System integration	Productive	(Sayer, 1998)		

Table 2. Mapping the IS literature onto the framework

5.1 Resistance as refusal vs. generative resistance

From our analysis of columns 1 and 2 in Table 2 and columns 2 and 3 in Table 3, we observe that resistance is most frequently understood to be aimed at curtailing IS change and it is studied at the episodic and social integration circuit. At the episodic circuit, IS research has focused on examining the observable actions by which resisters do not comply with what proponents of IS change expected from them. At the social integration circuit, existing studies provide empirical evidence about how resisters oppose –through non-acknowledgement, escape, and voice– to the rules that proponents assign to the IS change. However, whereas these studies have examined some of the rules that resisters contest, they have paid little attention to the new rules of meaning and membership that resisters enact to protect and further their interests. Thus prior IS literature has prioritized the study of the refusal facet of resistance (see column 4 in Table 2). Yet, this perspective of resistance as refusal ignores resistance at the system integration circuit. Hence, it underestimates the potential of resistance to transform the established order and promote organizational change –what we refer to the generative potential of resistance (see column 4 in Table 2).

We posit that to the extent that research on resistance stays at the episodic circuit, by looking at the outcomes that resisters aim to block, or at the social integration circuit, by examining the rules that resisters oppose to, it will only reveal what resisters refuse. In contrast, to the extent that scholars study how recipients of IS change challenge and enact new rules of meaning and membership through voice and replacement (social integration circuit) and how they enroll and produce IT artifacts in their acts of resistance aiming to transform the extant rules of domination (system integration circuit), they will be able to observe and document the generative potential of resistance.

The study of generative resistance enables us to observe the changes in the field that can lead to the forging of innovative forms of organizing, or the production of new power relations between actors. In that sense, generative resistance contributes to the development of a richer conceptualization of resistance in the IS literature. The generative view of resistance broadens the dominant refusal view by stressing its transforming capacity.

5.2   Characterizing resistance

In order to go deeper in our analysis of resistance at the social and system integration circuits, we realized that two additional dimensions were relevant: 1) the moment when the acts of resistance are studied (pre-implementation –which includes design, development, system selection, etc–, implementation, and post-implementation –which includes adoption and use), and 2) the subject of resistance or who resists (i.e. individuals or groups). Columns 4 and 5 in Table 3 show these two dimensions for the papers being analyzed.

Paper	Definition	Resistance behaviors	Moment	Subject of resistance
(Alvarez, 2008)	_	Workaround the system	post-implementation	individual
(Bhattacherjee and Hikmet, 2007)	"resistance is a generalized opposition to change engendered by the expected adverse consequences of change" (p.727) "resistance is… [focused] on the change from the status quo caused by IT usage" (p.727) "resistance is not a behavior but a cognitive force precluding potential behavior" (p.728)	Hostility toward change agents, covert behaviors to stall or undermine change	post-implementation	individual
(Doolin, 2004)	_	Cynicism, showing no interest	post-implementation	group
(Ferneley and Sobreperez, 2006)	"opposition, challenge or disruption to processes or initiatives" (p.347)	Negative resistance, positive resistance	post-implementation	individual
(Hirschheim and Newman, 1988)	"adverse reaction to a proposed change" (p.398)	Passive resistance (avoid the system, neutralize the impact of the system on ones work)	post-implementation	group
(Lapointe and Rivard, 2005)	a reactive process that occurs "following perceived threats that result from the interaction between initial conditions and a given object" (p.482)	Apathy, passive resistance, active resistance, aggressive resistance	post-implementation	individual & group
(Marakas and Hornik, 1996)	"A recalcitrant, covert behavior resulting from both fear and stress stemming from the intrusion of the technology into the previously stable world of the user" (p.209)	Passive resistance misuse	post-implementation	individual
(Markus, 1983)	"Behaviors intended to prevent the implementation or use of a system or to prevent system designers from achieving their objectives" (p.433)	Avoid adopting the procedures of the new system, the system was grudgingly accepted	implementation, post-implementation	group
(Martinko et al., 1996)	_	Passive resistance (low system usage), active resistance (sabotage)	implementation, post-implementation	individual
(Meissonier and Houzé, 2010)	"subjective process psychologically based at the individual level… behaviour is the primary dimension of resistance. Behaviour is a reaction to a present or ongoing situation perceived as being negative, as inequitable, as a threat or as a stressful feeling" (p.541).	Active resistance, aggressive resistance	pre-implementation	individual

(Newman and Noble, 1990)	_	Complaints	post-implementation	individual & group
(Sayer, 1998)	_	Denying the object, revolt	post-implementation	group
(Selander and Henfridsson, 2011)		Gossiping, storytelling, skepticism, calling in sick, leave of absence, mockery and satire, undermining management directions, debunking of managerial claims, indifference, ridicule and irony.	implementation, post-implementation	group
(Smith et al., 2010)	_	_	post-implementation	group

Table 3. Prior research on IS resistance

5.2.1   Individual- and group-level resistance

Doing a cross-analysis of results presented in tables 2 and 3 we observe that research on resistance as refusal, and particularly at the episodic circuit, looks at the actions of individuals. In contrast, research at the social and system integration circuits focuses on the group as the subject of resistance. Lapointe and Rivard (2005) justify a group-level focus to study resistance because "resistance from a single user would not be sufficient to severely affect the overall implementation process or lead to system abandonment" (p. 469). In that respect, we consider that the analysis of resistance at the circuit of social integration –which requires paying attention to the contestation of the rules of meaning and membership ascribed to IS change and the enactment of new ones– should be mainly carried out at the group level.

We advocate for informing resistance accounts to IS change at the group level with concepts that show how resisters are able to organize a collective action. To study such a collective action, we need other conceptual tools. For instance, social movement theory (Snow and Benford, 1988) provides the concept of framing which enables us to study the organization of the collective resistance. Framing refers to the generation of shared understandings and interpretations of the change and the viable courses of action that a collective (in our case, the resisters) may take. That is, framing aids a shared understanding and interpretation of aspects of the IS change in order to spur a collective purposive action. Snow and Benford (1988) identify three core framing-tasks: diagnostic framing which involves the identification of a problem and assignment of blame; prognostic framing which concerns the definition of solutions and strategies to the problem; and motivational framing which serves as a rationale for action. In short, framing is an act by which resisters generate consensus among them about the problem –i.e. some rules that proponents of IS change enact that threat the recipients–, and about the solution and actions toward the resolution of the problem –i.e. a new system or a new meaning that further the interests of recipients of IS change.

5.2.2   Resistance as a socio-material accomplishment and the moment of resistance

Prior studies conceptualize resistance as a social action. We argue that this view is incomplete. We suggest that studying generative potential of resistance requires viewing it as a socio-material accomplishment. This would mean, firstly, that researchers include in their analysis the agency of technical artifacts in the acts of resistance; secondly, that they conceive resisters as socio-material assemblages in which humans and technologies are intertwined (Latour, 1999; Orlikowski, 2007); and thirdly, that they take into account the disciplinary effects that the agency of those socio-material assemblages have on the proponents of IS change.

Another characteristic of generative resistance is the moment when it is more likely to occur and hence more easily studied. Although prior studies acknowledge that resistance may occur at various moments of IS change (Hirschheim and Newman, 1988; Markus, 2004), it has been mainly studied from the moment the system is already implemented –"resistance is clearly a barrier to IT usage in

organizations" (Bhattacherjee and Hikmet, 2007, p.726). That is, existing resistance literature has given voice to resisters –usually the users of the system and recipients of IS change– only once the system is installed. However, in that period, the post-implementation, resisters are faced with a completed system which they can oppose through workarounds or non-use, but they can rarely change it. Accordingly, we contend that generative resistance is more likely to be observed in the stages prior to the implementation (design, development and the same implementation stage) than in the post-implementation. It is in the early stages of implementation when resisters have a room for maneuver that decreases as the IS change moves forward. In particular, it is during the early stages of implementation when the working practices, interests, rules, and relations are inscribed in the technology and from that moment they become more stable, durable and hence difficult to revert because they acquire a material aspect (Leonardi and Barley, 2008). In other words, resisters' maneuverings in the early stages of IS change have the potential to generate changes in the system and in turn in the organizational setting.

Finally, some authors (Lapointe and Rivard, 2005; Selander and Henfridsson, 2011; Smith, et al., 2010) acknowledge that resistance evolves with time across the different stages of IS change. Yet these authors still view resistance as the opposition of discrete entities whose positions are fixed. Through the lens of our framework, and in line with the view on resistance of Fleming and Spicer (2007) and Courpasson et al. (2011), we view generative resistance as an ongoing socio-material phenomenon where actors engage in a given struggle in which their positions can be modified. In that respect, IS change is made possible not only by what proponents do, but also by what resisters bring to the change process –for instance, when resisters attempt to shift the power relations in the organization.

6   Contributions and Conclusions

In this paper we have drawn attention to research on resistance in the IS field. Drawing upon the framework of the circuits of power (Clegg, 1989) and complementing it with the various modes of resistance identified in the organizational literature (Courpasson, et al., 2011; Fleming and Spicer, 2007), we have developed an integrative framework that depicts resistance as flowing through three circuits. This integrative framework can contribute to a theoretical understanding of resistance to IS change and help researchers classify resistance accounts and compare them based on the circuit(s) at which resistance is studied. Second, our mapping of the resistance literature in the IS field onto our framework has allowed us to show that resistance has been mainly conceptualized as an act of refusal or defiance that aims to block the outcomes of causal power. We broaden this research perspective on resistance by proposing the concept of generative resistance. With the generative view of resistance, we think of resistance as a resourceful act that can transform the established order and innovate in the forms of organizing.

Research on the generative potential of resistance requires focusing on how the recipients of IS change resist through the management of meanings and the use of artifacts in order to tilt in their favor the IS change. We suggest that such a perspective is relevant for our understanding on how to capitalize on the potential transforming capacity of resistance. This transforming capacity is particularly important in the context of IS change because it can help explain heterogeneity and variability –the emergence of variants in processes and technologies–, and enhance our understanding of innovations that result from the resisters ability to challenge the existing rules of the game. In practice, the generative view of resistance enables managers to avoid framing resistance as something negative which has to be removed. Instead, this view offers IS managers and change agents a wide range of new change scenarios which can emerge out of the interaction between power and resistance.

References

Alvarez, R. (2008) Examining technology, structure and identity during an Enterprise System implementation. Information Systems Journal 18(2), 203-224.

Backhouse, J., Hsu, C.W. and Silva, L. (2006) Circuits of Power in Creating de jure Standards: Shaping an International Information Systems Security Standard. MIS Quarterly 30(5), 413-438.

Bhattacherjee, A. and Hikmet, N. (2007) Physicians' resistance toward healthcare information technology: a theoretical model and empirical test. European Journal of Information Systems 16(6), 725-737.

Clegg, S. (1989). Frameworks of power, London: Sage.

Clegg, S., Courpasson, D. and Phillips, N. (2006). Power and Organizations, London: Sage.

Courpasson, D. and Dany, F. (2009). Cultures of Resistance in the Workplace. In Haugaard, S. R. C. a. M. (Ed.), The SAGE Handbook of Power, London: SAGE, pp.332-347.

Courpasson, D., Dany, F. and Clegg, S. (2011) Resisters at work: Generating productive resistance at the workplace. Organization Science 1-19 (published online May 2011).

Courpasson, D. and Golsorkhi, D. 2011. Power and Resistance Variations on "what's going on politically in and around organizations?". M@n@gement, 14: 1-46.

Doolin, B. (2004) Power and resistance in the implementation of a medical management information system. Information Systems Journal 14(4), 343-362.

Ewick, P. and Silbey, S. (2003) Narrating Social Structure: Stories of Resistance to Legal Authority. American Journal of Sociology 108(6), 1328-1372.

Ferneley, E. and Sobreperez, P. (2006) Resist, comply or workaround? An examination of different facets of user engagement with information systems. European Journal of Information Systems 15(4), 345-356.

Fleming, P. and Spicer, A. (2007). Contesting the Corporation: Struggle, Power and Resistance in Organizations: Cambridge: Cambridge University Press.

Ford, J.D., Ford, L.W. and D'amelio, A. (2008) Resistance to Change: The Rest of the Story. Academy of Management Review 33(2), 362-377.

Foucault, M. 1990. The History of Sexuality, Vol. 1: An Introduction. Vintage Books Edition.

Gill, T.G. (1996) Expert systems usage: Task change and intrinsic motivation. MISQ Quarterly 20(3), 301-329.

Guha, S., Grover, V., Kettinger, W.J. and Teng, J.T.C. (1997) Business process change and organizational performance: Exploring an antecedent model. Journal of Management Information Systems 14(1), 119-154.

Hirschheim, R. and Newman, M. (1988) Information Systems and User Resistance: Theory and Practice. Computer Journal 31(5), 398-408.

Jiang, J.J. and Muhanna, W.A. (2000) User resistance and strategies for promoting acceptance across system types. Information & Management 37(1), 25-36.

Joshi, K. (1991) A Model of Users Perspective on Change - the Case of Information-Systems Technology Implementation. MIS Quarterly 15(2), 229-242.

Kavanagh, J.F. (2004) Resistance as motivation for innovation: Open source software. Communications of the Association for Information Systems 13(1), 615-625.

Kim, H.-W. and Kankanhalli, A. (2009) Investigating User Resistance to Information Systems Implementation: A Status Quo Bias Perspective. MIS Quarterly 33(3), 567-582.

Klaus, T. and Blanton, J.E. (2010) User resistance determinants and the psychological contract in enterprise system implementations. European Journal of Information Systems 19(6), 625-636.

Lapointe, L. and Rivard, S. (2005) A Multilevel Model of Resistance to Information Technology Implementation. MIS Quarterly 29(3), 461-491.

Latour, B. (1999). Pandora's Hope. Essays on the Reality of Science Studies, Cambridge, MA: Harvard University Press.

Leonardi, P. and Barley, S.R. (2008) Materiality and change: Five challenges to building better theory about technology and organizing. Information and Organization 18(159-176.

Marakas, G.M. and Hornik, S. (1996) Passive Resistance Misuse: Overt Support and Covert Recalcitrance in IS Implementation. European Journal of Information Systems 5(3), 208-220.

Markus, M.L. (1983) Power, Politics and MIS Implementation. Communications of the ACM 26(6), 430-444.

Markus, M.L. (2004) Technochange Management: Using IT to Drive Organizational Change. Journal of Information Technology 19(1), 4-20.

Markus, M.L., Steinfield, C. and Wigand, R. (2006) Industry-wide Information Systems Standardization as Collective Action: The Case of the US Residential Mortgage Industry. MIS Quarterly 30(5), 439-465.

Martinko, M.J., Henry, J.W. and Zmud, R.W. (1996) An Attributional Explanation of Individual Resistance to the Introduction of Information Technology in the Workplace. Behaviour & Information Technology 15(5), 313-330.

Meissonier , R. and Houzé, E. (2010) Toward an "IT Conflict-Resistance Theory": action research during IT pre-implementation. European Journal of Information Systems 19(5), 540-561.

Newman, M. and Noble, F. (1990) User Involvement as an Interaction Process: A Case Study. Information Systems Research 1(1), 89-113.

Orlikowski, W.J. (2007) Sociomaterial Practices: Exploring Technology at Work. Organization Studies 28(9), 1435-1448.

Rodon, J., Pastor, J.A., Sese, F. and Christiaanse, E. (2008) Unravelling the dynamics of IOIS implementation: an actor-network study of an IOIS in the seaport of Barcelona. Journal of Information Technology 23(3), 97-108.

Sayer, K. (1998) Denying the technology: middle management resistance in business process re-engineering. Journal of Information Technology 13(4), 247-257.

Selander, L. and Henfridsson, O. (2011) Cynicism as user resistance in IT implementation. Information Systems Journal DOI: 10.1111/j.1365-2575.2011.00386.x(1-24.

Senn, J.A. (1978) A management view of systems analysts: Failure and shortcomings. MIS Quarterly 2(3), 25-32.

Silva, L. (2007) Epistemological and theoretical challenges for studying power and politics in information systems. Information Systems Journal 17(2), 165-183.

Silva, L. and Backhouse, J. (2003) The circuits-of-power framework for studying power in institutionalization of information systems. Journal of the Association for Information Systems 4(6), 294-336.

Smith, S., Winchester, D., Bunker, D. and Jamieson, R. (2010) Circuits of Power: A Study of Mandated Compliance to an Information Systems Security de jure Standard in a Government Organization. MIS Quarterly 34(3), 463-486.

Snow, D.A. and Benford, R.D. (1988). Ideology, frame resonance, and participant mobilization. In Bert Kalndermans, H. K., and Sidney Tarrow (Ed.), International Social Movement Research, Greenwich, CT: JAI Press, pp.197-217.

Sutanto, J., Kankanhalli, A., Tay, J., Raman, K.S. and Tan, B.C.Y. (2008) Change Management in Interorganizational Systems for the Public. Journal of Management Information Systems 25(3), 133-175.

Weber, M. (1978). Economy and Society: An Outline of Interpretive Sociology, Berkeley, CA: University of California Press.

West, T.W. and Mullins, C.J. (1981) Word Processing in a Major Corporation: Policies, Plans, and Management. MIS Quarterly 5(4), 1-18.