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Power, Communities, and Community Informatics: a meta-study

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Abstract

In this paper we tackle the theme of power in the context of communities and Community Informatics through addressing five questions.

1. What is power?
2. What is empowerment?
3. In what ways is it exercised?
4. How does all of this pertain to communities?
5. How does all of this pertain to Community Informatics?

The first three questions are addressed through reference to well known propositions drawn from social theory, and having established this background, the last two questions are foregrounded through a content analysis meta-study of the abstracts of papers submitted to the 2009 Prato Community Informatics Conference. The overarching theme of this conference was power and empowerment in community informatics
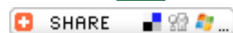
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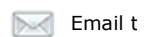
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The Journal of Community Informatics, Vol 9, No 1 (2013)

Power,Communities, and Community Informatics:
a meta-study

Michael V Arnold

Community Informatics and views of power and empowerment

Community Informatics is an emerging field of research and practice located at the intersection of communities and ICT. In a typical description Gurstein suggests that Community Informatics involves…

> "… *a commitment to universality of technology-enabled opportunity including to the disadvantaged; a recognition that the "lived physical community" is at the very center of individual and family well-being – economic, political, and cultural; a belief that this can be enhanced through the judicious use of ICT; a sophisticated user-focused understanding of Information Technology; and applied social leadership, entrepreneurship and creativity"* . (Gurstein 2007: 12)

All of this is very positive – strengthening communities, connecting people, sharing social solidarity, addressing disadvantage – yet it implies social change, and social change means dealing directly with distributions and executions of power. Understanding power, dealing with power and wielding power is thus implicit in the unfolding Community Informatics project, but arguably, power is conceptually and theoretically under-developed in the Community Informatics field. Community Informatics is in part multidisciplinary (in that a typical CI project will involve Anthropologists, Computer Scientists and so on, working in parallel), and/or interdisciplinary (in that the Anthropology will shape the Computer Science, and vice versa, to create a hybrid disciplinarity), and in this spirit of multidisciplinarity and interdisciplinarity, CI has much to learn about power from the social science disciplines that have made power their area of special concern – in particular, political philosophy, sociology and social theory.

A better understanding of the nature and dynamics of social power can potentially provide CI research and practice with improvements in ICT engineering for community-oriented systems design, in improved practices in community informatics implementation, in improved analysis of possibilities and constraints facing communities, in improved theorisation of Community Informatics and for improved generalisability of experience in all of the above.

Accordingly, in this paper we ask how power is theorised in the social sciences, and against this background, ask how the field of Community Informatics theorises power.

What is Power?

To answer this question one might begin with arguably the most influential 20thC work on power – *Discipline and Punish: the Birth of the Prison* (Foucault 1977) – "an analysis of power that has had "an enormous impact in and across a whole range of intellectual specialisms" (Garland 1986, p.865). Here Foucault contrasts a premodern construction of power (where power is concentrated in the figure of the Sovereign) with the modernist reconfiguration of power as something that is distributed and decentralised through regimes of discipline. So in this premodern construction the power of the Sovereign is a measure of the capacity of agent (A) to effect change in entity (C) through the exercise of force (B). Power resides somewhere (A), power is exercised from that point of origin (A), moves through time and space from its point of origin (via agent B), and its effects are observed at the point of destination (C).
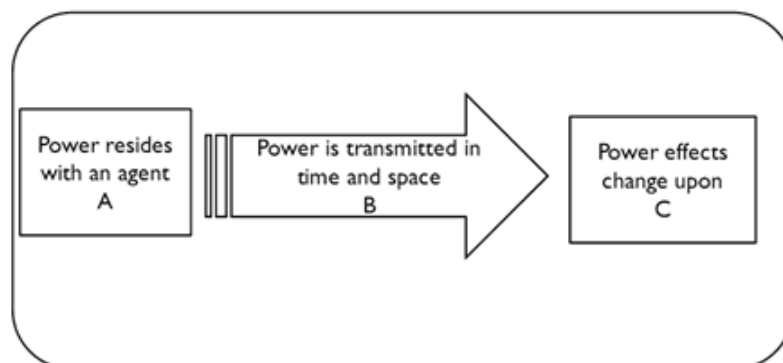

Figure 1 : Sovereign Power

It will be shown that that this simple and common understanding of power does not serve us well in the humanities and social sciences in general, or in community informatics in particular.

Before coming back to discuss power as it understood in the humanities and social sciences, we will take a short diversion to describe the related notion of empowerment, an allied concept which is frequently invoked in Community Informatics.

What is Empowerment?

Simply put, empowerment is an act of power (however power might be understood) that enables others to exercise power (however it might be understood). There is clearly a paradox here, perhaps derived from the misapplication of a Newtonian physics metaphor, in so much as 'empowerment' implies that power may be gifted by the more powerful (A) to the less powerful (C). If empowerment is within the gift of the more powerful, and it is gifted, then empowerment is an act of power exercised by (A) to which (C) are subject. If it can be gifted it may also be withheld, which again expresses the power of the powerful and the relative powerlessness of the powerless, at least prior to and at the time of the transaction. In this sense empowerment is patronage.

But the transaction having been made, are not the powerless more powerful, and therefore have they not been empowered, by either the powerful or by the transaction, or by both? If so, we have an aggregated outcome – a "win-win" game rather than a "zero-sum" game – wherein the power of the powerful is affirmed by their ability to empower, and the power of the empowered is increased by the transaction.

For this to be so depends upon what we understand by power, and upon the transactions by which power is said to be mobile and the relatively powerless are said to be empowered.

Now to return to the question of power.

Again, What is Power?

In the broadest terms power is present where an actor effects the way of being of another actor (Latour, 1992) . The actor may be a person, a computer, a community centre, a policy document, or any manner of other thing, and a 'way of being' encompasses behaviour, demeanour, constitution, life-experience, and all other properties of an actor in their lifeworld. But this having been said, the manner and means by which 'an actor effects the way of being of another' is very much contested territory, and so it is in Community Informatics. The following model is an attempt to bring together on one page some well known claims developed and contested in a huge body of literature in the social sciences, by figures such as Marx (Marx 2001), Machiavelli (Machiavelli 1985), Nietzsche (Nietzsche 1968), Habermas (Kelly 1994), Foucault (Foucault 1977, Kelly 1994), Gramsci (Gramsci 1988), Giddens (Giddens 1984), Deleuze and Guattari (Deleuze and Guattari 1988), Latour (Latour 1992, 1993) and by many others who will be very familiar to the reader. Each of these claims about power, drawn from the wider social sciences, was evident in at least some of the papers presented at the 2009 Prato conference, although as will be seen, some propositions about power drawn from the social sciences are clearly more influential in CI than others. The point here is not to assert that one proposition is correct or is more important than any other in a general sense, or to provide a comprehensive exegesis and critique of each proposition, or to create a model which reconciles the differences and contradictions between these propositions. Rather, the point is simply to remind the reader of the various propositions that have influenced our general understanding of the manner and means by which social power is exercised, and then to show how each has been brought to bear in the context of community informatics.

Figure 2 gathers up and brings together significant and well known propositions that have been made about the nature of power in the social domain. These propositions are explained in principle below, before moving on to a more focused discussion of how the propositions have been utilised in Community Informatics.
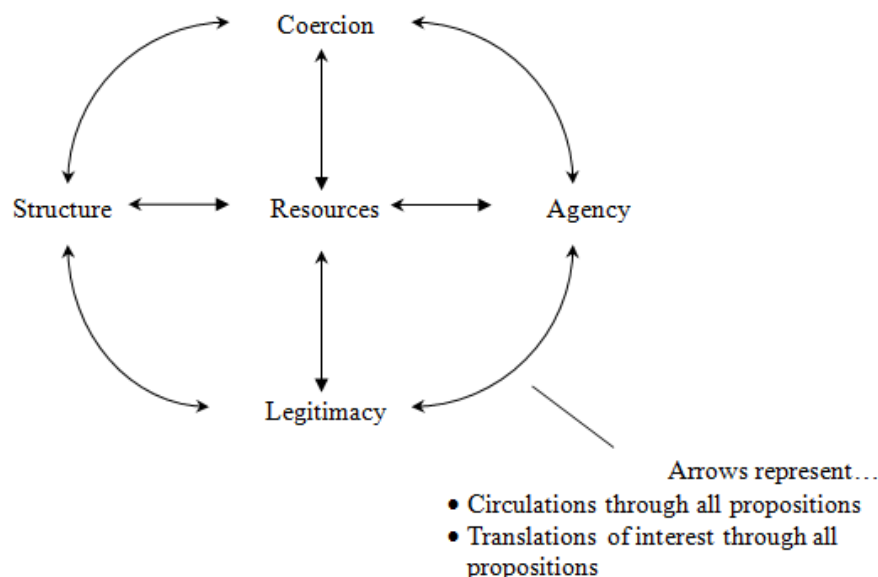
Figure 2: Gathering up propositions about power in the social domain

Propositions about Power

Each of the propositions about power brought together in the above diagramme is now explained in abstract terms, before moving to concrete examples drawn from CI.

1. **Resources:** *Power derives from the ability to command resources. (See especially the Marxist schools)*

Comment:

These resources may provide Legitimacy and authority, through knowledge say, or may allow the application of Coercive power (through say, violence or brute force). Resources may derive from social Structure or contribute to social structure, and simultaneously, may derive from and contribute to Agency. Resources may be material (e.g. ICT) or immaterial (e.g. Social Capital).

Potential Applicability to Community Empowerment:

- Community Informatics projects often begin with the provision of new resources in a community context. These resources are often ICT.

- Some resources are at the command of a community, as distinct from those at the command of individuals, families, agencies, corporations and other entities. Community resources may include the ability to socialise and to act collectively (Social Capital), which has implications for the authority and legitimacy of community action as well as implications for the exercise of coercive power – over its members, or over other communities. Resources may also include vernacular, situated knowledge, particularly of their own position. In this sense the community is a resource unto itself, in the network of connections among the community resourcing community action.

- Most resources in most communities are at the command of individuals rather than communities.

- In the Community Informatics context, communities are typically regarded as lacking in resources such as access to employment, health care, internal coherence and identity, expert 'certified' knowledge, and so on.

- Resources aggregate and compound. Those who may be well resourced in some areas (e.g. education) leverage that to obtain resources in another (e.g. health care or employment). ICT is typically seen to be one resource that can be leveraged to access other resources.

2.a Structure: *Power may be structural, or structured (as well as agentic). (See especially the works of Foucault, Giddens, Gramsci)*

Comment:

To coerce, adopt a position of authority and Legitimacy, and exercise coercion, is to act within and to refresh certain ongoing relatively stable frameworks, variously understood as class, gender, patriarchy, race, privilege, caste, status, and so on. Actors derive power differentially from the structure, not from characteristics of the actor as such, and not from agency as such. The ability to shape the structure has far reaching implications for power because it effects all who operate within that structure.

Potential Applicability to Community Empowerment:

- Communities operate within structures. Whilst structure is emergent in the exercise of agency, some aspects of a community's position in relation to others may be best understood by foregrounding the community's structural position in wider society. (Other aspects of a community's power may be best understood by foregrounding Agency).

- Communities also execute power structurally in their own conduct. Class, gender, disability, status, language, access to resources and so on, are reflected in differential power within communities as well as between communities.

- Altering structures in order to alter power arrangements in respect of a community is a high stakes game with extensive and far reaching outcomes, but of course is hard to achieve.

2.b Agency: *Power may be agentic (as well as or rather than structural). Agency refers to the freedom of a social agent to determine their own actions. (See especially the works of Nietzsche, Latour, Giddens, Deleuze and Guattari)*

Comment:

The relation between agency and structure has been the backbone of social theory for at least 150 years. They are almost universally held to be in relation – *agency* refreshing structure and thus providing opportunity to reshape it, and *structure* both enabling and constraining agency. Whilst agency is emergent in the context of structure, some aspects of a community's position in relation to others may be best understood by foregrounding the community's agency. (Other aspects of a community's power may be best understood by foregrounding a structural position).

Potential Applicability to Community Empowerment:

- Communities can be said to be agentic in so much as they exist as a social entity. Agency has been extensively explored at the level of the individual or the subject, but less so in terms of communities. The uncertain boundaries and ontologies of communities make them a difficult subject of study in an already difficult field. Perhaps what we know of agency in the subject can be applied to communities, perhaps not.

- The individual subject is said to be agentic in so far as the subject is self governing and has choices about how they act in the world. More powerful people have more agency than less powerful people.

3.a. Coercion: *Power is an exercise of coercion, and is not to be identified as characterising every interaction. Coercion implies that an imbalance in the ability to influence is exercised in the interaction. (See especially the Marxist schools, Nietzsche, Foucault.)*

Comment:

Though power may well be exercised in every interaction, in cases where power is roughly in balance, the interaction does not turn on the exercise of power. To identify all interactions, including non-coercive interactions as turning on the exercise of power, is to make a universally applicable claim, and therefore no claim at all.

Potential Applicability to Community Empowerment:

- Communities may be empowered to coerce. They may be empowered to coerce their own members – say, alcoholics, or criminals, or teenagers. Alternatively they may be empowered to coerce non-members – say, employers, or government agencies.

- Communities may be empowered to a point which falls short of the capacity to coerce, but reaches a point where they can interact, if they are working from a very low power base.

Power is also associated with violence and with brute force, a special case of coercion.

Comment:

Violence and brute force are understood to unilaterally alter people and things and their circumstances in a material way. Violence damages people or things and is employed as a negative force, for its 'stopping-power' as it were, and brute force can be understood as a positive force, not in a moral sense, but for its 'doing-power' as it were. Violence and brute force are often overlooked in the social sciences in favour of more nuanced understandings of power, but violence and brute force are still exercised and held in reserve as a threat or promise, legitimately exercised exclusively by the State and its agencies, but also exercised by others.

Potential Applicability to Community Empowerment:

- Some communities do exercise violence from time to time – perhaps in the absence of other forms of power, or perhaps because they choose to. Violence and brute force may be brought to bear by the community on members of the community, or may be brought to bear on outsiders.

- Some communities are subject to violence and brute force exercised by other social agents – other communities, agents of the State, organized crime and so on.

4. **Legitimacy:** *Power is associated with positions of legitimacy and authority, and knowledge is associated with positions of power, derived from legitimacy and authority. (See especially the works of Foucault, Habermas)*

Comment:

Since the Age of Reason and the Enlightenment, power, legitimacy, authority and knowledge have been thought to be inextricably interrelated.

Potential Applicability to Community Empowerment:

- Communities may be empowered as their members are able to exercise externally legitimized knowledge that has been certified and authoritative in places external to the community. (e.g. knowledge of science, knowledge of plumbing)

- Communities may be empowered by internally legitimized knowledge in so much as it is associated with communal identity, and with authority and legitimacy within the community. (e.g. situated knowledge, cultural knowledge)

- Communities may be empowered by exercising legitimate and authoritative claims under the auspices of representative democracy. That is, community representatives may be empowered to speak in the interests and desires of the community, with the authority of the community. Community members may be empowered to speak of their own interests and desires with the authority of knowledge of those interests and desires.

- The State and its agencies also derive legitimacy from knowledge. The State is empowered by its knowledge of its citizens, and its power is legitimized by that knowledge.

5.a. Translation: *Power is exercised through a translation of interests. (See especially the works of Latour).*

Comment:

The translation of interests refers to an alignment of participants such that their resources, agencies, authority, brute force and so on, are articulated rather than in opposition or tangential to one another. These interests may be material, structural, transient, subjective, ideological, interpolated, hegemonic, discursive, and so on.

Potential Applicability to Community Empowerment:

- Communities may be empowered to translate the interests of their membership and bring these interests into alignment, such that the alignment becomes articulated as the interests of the community as a whole.

- Communities may be empowered to translate the interests of other parties to form alliances with the community.

5.b. Circulation: *Power is distributed through a network. It constantly circulates and is not centralised in any place. (See especially Foucault, Latour)*

Comment:

In an empirical sense, whilst power is not evenly distributed through a network, it is distributed and circulates through the network. So powerful entity A is only powerful in so much as B acts at the behest of A. It is B who acts, and in a real sense exercises power, not A.

In an analytic sense it also circulates through the various propositions by which we understand and represent power. So for example, in Fig. 2 power is represented as a circulation between Structure and Agency, between Coercion and Legitimacy, utilising Resources on the way.

Potential Applicability to Community Empowerment:

- Communities are frequently required to express the power of government in the community's traditional role of standing between the subject and the State, translating and delivering the State to the subject and the subject to the State (Tönnies 1935). The cooption of the community as a conduit places the community in a position of power.

- The power of a community is distributed through it members.

- Communities exist in a circulation of relations. In this sense communities are dynamic and relational. Important among these circulating relations is the circulation of power – within the community and between the community and other social entities.

- This circulation of power may be informed by reference to the relationship between Structure and Agency, Legitimacy and Coercion, and the role of Resources.

Each of these aspects of power is not discrete, but exists as circulating relationships between the parts, translated into the particular interests of affected parties. At the centre lies domain of Resources. A capacity to access non-material or material resources (for example, authority, computers or armies) is central to circulations and translations of structure and agency, and coercion and Legitimacy.

Having described the theory in abstract terms we can turn to the question of how informatics has been found to empower communities.

Method

The abstracts of papers submitted to the 2009 Prato Community Informatics Conference were examined and those that were selected for analysis were case studies (i.e. reported empirical work), were in English, and included a discussion of power or empowerment in the text, resulting in a data-set of 49 papers. The Prato Community Informatics conference was chosen as being representative of the ongoing conversation occurring in the Community Informatics field as a whole at this point in time. This annual conference is the premier conference in its field. It is organised by the Centre for Community Networking Research, Monash, in conjunction with the international Community Informatics Research Network, and since 2003 has held successful conferences, workshops and other events in Prato, Australia, the UK, France, and Portugal. Although the conference language is English, there is significant representation from Francophone and Spanish-speaking countries. The 2009 CI conference was chosen over other years because that year's conference theme – "Empowering Communities" – invited participants to directly address power. Using this sample as our data source, we examine coercion, legitimacy, authority, knowledge, violence, brute force, structural change, agency, resources, translation of interests, and circulations of power as they are represented in the context of communities and informatics.

The meta-analysis of the Prato papers was first conducted on the abstracts, which were available prior to the conference itself, and prior to the published proceedings. A few abstracts were withdrawn and the final papers were not published in the proceedings, but for the purposes of this paper they have been retained on the basis of an analysis of the abstract. The meta-analysis was then presented at the conference, and the authors were invited to discuss the findings and pick up any errors in our interpretation of their work. Since that time the full papers have been published (Stillman, L., T. Denision and G. Johanson 2009) and we are confident that the meta-analysis accurately reflects their approach to power. The analysis was entirely manual (rather than using text-analysis software) and necessarily entailed a degree of interpretation. In some cases propositions about power and empowerment were not expressly or literally stated, but were thought to be clearly inferred, and were regarded as existent. In other cases propositions about empowerment that were clearly stated in the abstract may not in fact have figured significantly in the case study and were not included. In yet other cases, propositions about power may not have been stated, and may not have been inferred in my reading, but may nonetheless figure in the Case Study.

That having been said, we can move on to a discussion of what this snapshot of Community Informatics makes of power and empowerment.

Findings

a. Resources

It is entirely unsurprising that work in Community Informatics should focus on the empowerment of communities through the provision of ICT resources of one kind or another, and indeed, this is the case in 40 of the 49 studies. After all, as we see illustrated in the opening Gurstein quote, we work in 'Community *Informatics*', not narrower fields like 'Community Housing' or 'Community Health', nor broader fields like 'Community Studies' or 'Community Development'.

Community Informatics is in this sense a field that is unabashedly techno-centric, whilst at the same time, keen to push through the limitations of techno-determinism (Stillman and Linger 2009). Thus, the 40 studies that do place the provision of ICT resources front and centre of the empowerment equation, would seem for the most part sensitive to the critiques of techno-determinism, are aware that ICT are often unsuccessful, are aware that experiences and outcomes are situated and contingent, and are keen to see that deployment is shaped and controlled by the community in question. Technology is clearly placed in the social context. But for an outsider in particular, looking from say, mainstream Anthropology, Development Studies or Sociology, the Community Informatics "progress through technology" project may well seem not so much focused and pro-active, as narrow and theoretically naive. Continued efforts to collaborate with the work of mainstream Anthropology, Development Studies, Sociology and Social Theory will no doubt be productive for all.

The provision of ICT resources is intended not to be an end in itself, but a means to an end. This further end may be the procurement of resources of another kind – such as education or employment, or the enhancement of Agency or Legitimacy. These will be discussed in due course, but before moving on, one may consider the possibility of providing ICT with no further motive or end in mind. If ICT deployment is to be shaped and controlled by the relatively powerless for their own ends, why must that end be negotiated with the powerful? The powerless can surely determine a worthy use of ICT by themselves – such as engaging in Open University courses, or selling the ICT to buy recreational drugs.

Nine abstracts do not pursue the proposition that communities be empowered through the provision of ICT resources (Bieniecka; Chigoan; Farinosi; Gies; Martin, Walsh & Wilson; Nabeel & Pinnock; Petric & Petrovcic; Raffl; Roode; Toland; Wei) and at least one (Gies) raised a counter-argument to the "progress through technology" project. Those that do not focus on the deployment of ICT focus instead on relations between Agency, Legitimacy and Structure (Wei), Circulations and Translations (Martin; Toland; Walsh & Wilson), Agency and Translations (Raffl), Coercion and Agency (Farinosi), Translations (Chigoan; Nabeel & Pinnock; Roode), Agency, Legitimacy and Translations (Petric & Petrovcic; Gies,) and Agency and Structure (Bieniecka).

b. Resources, Agency and Legitimacy

By far the largest grouping of propositions were those concerned with the Resources-Agency-Legitimacy relation (Flipsen & van der Weide; Dasgupta; Joshi; Gomez & Gould; Selaimen; Gamage; Wolske; Freistadt; Jeff & Pal; Adams, & Wolske; Lee, O'Mara, Trere; Carreon; Garrido, Rissola & Rastrelli; Elliot, Gammage; Williamson, Wilson & Martin, Nielsen)
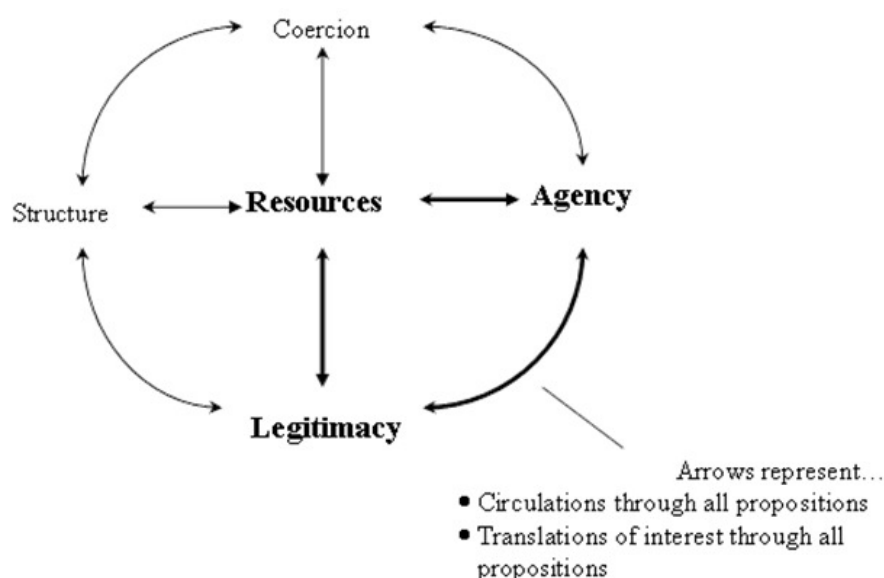

Figure 3: An emphasis on Resources, Agency and Legitimacy

Among this group, Resources and Legitimacy were linked in a variety of ways. In many cases the project intended to use ICT to provide Knowledge Resources of a kind that were certified and validated by powerful entities outside of the community – such as employers and educational authorities (e.g. Elliot; Flipsen & van der Weide; Freistadt; Garrido, Rissola & Rastrelli; Jeff & Pal; Joshi, Gomez & Gould; Lee).

Community Informatics projects that address empowerment through the Resources-Agency-Legitimacy relation appear to bracket the Structure of power relations, though it is possible to explicitly address Structure (e.g. Freistadt; Wei).

c. Agency

Among the Resources-Agency-Legitimacy group, Agency was addressed in different ways. For the most part, Community Informatics projects seek to empower communities through enhancing the agency of the individuals that constitute that community (e.g. Adams & Wolske; Carreon; Craig; Elliot Flipsen & van der Weide; Freistadt; Gamage; Garrido; Gomez & Gould; Jeff & Pal; Joshi; Lee; O'Mara; Rissola & Rastrelli; Selaimen), and this point of view is reflected in the literature (e.g. It is not the community as a collective that is the agent of empowerment through access to Resources-Legitimacy, but the empowerment of the individual subject, not contingent upon the empowerment of the community. It might be argued that the empowerment of community members is tantamount to the empowerment of the community, but though this may be so in some cases, in others it will not be so, as the empowered subject exercises their new Agency to leave the community. Even in cases where this is not so, we think the distinction between individual agency and collective agency is still worth making and worth being sensitive to.

Projects that took another tack and used the community as its ontological focal point, rather than or as well as individuals within the community, were also numerous (e.g. Adams & Wolske; Carreon; Dasgupta; Elliot; Gammage; Nielsen; Selaimen; Trere; Williamson; Wilson & Martin; Wolske). A way of considering the difference is to imagine that that these projects focused on the properties of the interstitial space shared by the community, not the properties of the occupants of that space, and upon the properties of the space shared by the community and other agents (for example Government, or corporations). To use another metaphor, these projects focused on links between the nodes rather than the nodes, and were reliant on network effects to empower the agency of the collective, not the agency of the individual as such (see also Arnold 2007).

Still other projects used institutions as the ontological focal point, and thus sought to intervene in the Resources-Legitimacy-Agency relation to empower the institution rather than the community or the subject (e.g. Gamage; Gomez & Gould; Pscheidt).

d. Legitimacy

In addition to the distinction between the agency of subjects, communities and institutions, another useful distinction may be made between certified Legitimacy and collective Legitimacy. That is, Knowledge-Authority-Legitimacy may be certified by Power external to the community (e.g. the Knowledge-Authority-Legitimacy associated with an educational qualification), or Knowledge-Authority-Legitimacy may be warranted as an exercise of community agency (e.g. the Knowledge-Authority-Legitimacy associated with a community's knowledge of its culture, interests and sense of self). Examples of empowerment through certified Resources-Legitimacy-Agency relations have been given earlier (Elliot Flipsen & van der Weide; Freistadt; Gomez & Gould; Jeff & Pal; Joshi; Lee, Garrido; Rissola & Rastrelli;).

Examples of communally warranted Knowledge-Authority-Legitimacy are to be found in projects that seek to give voice to the community's knowledge of itself (e.g. Adams & Wolske; Carreon; Dasgupta; Elliot; Gammage; Joshi; Nielsen O'Mara; Selaimen; Trere; Williamson; Wilson & Martin; Wolske).

This internal, situated Knowledge-Authority-Legitimacy may pertain to the community's socio-economic or political interests (e.g. facilitating political participation or planning participation), or may entail cultural interests (e.g. intergenerational cultural transmission). It may also be noted in this context that Government, State agencies, commercial entities and other powerful agents are also empowered by the Knowledge-Authority-Legitimacy equation. In conditions of unequal power arrangements, and in the absence of good faith, an invitation to give voice to collectively legitimized knowledge of a community may be an invitation to participate in legitimizing action that is not in the community's interests.

Several case studies address questions related to Resources and Agency without expressly addressing Legitimacy (e.g. Birowo de Carvalho; Dolnicar; Lambert; Matielo, Rodriguez & Planella; Pscheidt;), and this work may benefit from being sensitized to claims made in this space.

e. Coercion

Few case studies directly address issues related to the coercive qualities of power and empowerment, the exceptions being Clark & Beaton, Farinosi, and Gies, a puzzling absence given that Information Systems are clearly instruments that have a dangerous potential for coercion. Databases for example, establish regimes which legitimize certain responses and forbid others, so the subject is Male or the subject is Female, and no other choice is permitted. In controlling the discourse the ICT is controlling what can and can't be said, what is relevant and what isn't, what is important and what isn't. By using the material brute-force of materiality – the software, the interface, the input and output devices – the ICT is coercive in respect to Knowledge-Authority-Legitimacy, and thus Agency, Structure, Resources, Power and Empowerment.

At another level, coercion may escape the attention of Community Informatics because of its emphasis on empowerment through enabling the provision of missing Resources, chiefly informational resources and communicative resources. Indeed, 40 of 49 papers hinged on the provision of Resources to community. That is, Community Informatics would seem to operate from a "deficit model", whereby community's are to be empowered by being provided with something that they lack Once this provision is made, communities, or subjects within the community, are empowered to 'bootstrap' their own way out of their disempowered state, and are expected to bootstrap their own way out of their predicament. Coercive and Structural aspects of the power equation need not be addressed, which perhaps accounts for the affinity between neo-liberalism and social theory positioned around social-capital.

f. Translation

Translations of Interest occur as power circulates. Some studies address these Translations and Circulations in a more or less direct way (e.g. Toland, Chigoan, Roode, Nabeel &Pinnock, Martin, Walsh & Wilson) but in the main, Translations are implicit in the analysis.

Most commonly, Translations of Interest are expressly coupled with Resources (e.g. Copeland; Fawcett; Gasiea, Emsley, & Mikhailov; Miller; Sabiescu). These Resources may be material (such as ICT) or immaterial (such as Knowledge of Culture). Here, empowerment is contingent on ensuring that material resources (such as ICT) are aligned to the material and immaterial interests of the community or its subjects (e.g. Gasiea, Emsley, & Mikhailov , Malina & Thompson). The Translation of ICT to align it with its users is a design problem we are all familiar with, but also required is a Translation of the user, in our case the diverse Resources of the community and its subjects, such that they are not radically divergent. Translating the differentiated immaterial Resources of different generations (e.g. Sabiescu), different sub-groups (e.g. Copeland), or differently imagined futures (e.g. Miller) is a more fraught and sensitive undertaking, requiring a sensitivity to the danger that the Translation is not coercive and honours the integrity of the Interests of the groups and subjects in question.

In other case studies the focus is on Translation in relation to Agency as well as Resources (e.g. Craig; Malina & Thompson; McLoughlin, Brown & Adria; Raffl; Saad-Sulonen & Horelli). These cases typically involve the facilitation of public participation, a process whereby the diverse interests of the community and its subjects are Translated through funnelling, filtering, aggregation, or other forms of re-presentation, thus enhancing the Agency of otherwise unfocused interests. In effect this form of Translation constructs a new ontology – "community opinion", or "community interests", the product of the Translation of multi-vocal community interests into a univocal voice of the community. This too is a delicate undertaking.

Conclusion

If one assumes that the papers submitted to the 2009 Prato Community Informatics conference on 'Empowering Communities' provided a snapshot of the way power and empowerment was understood in the field at that time, one may draw the following conclusions.

1. CI places the provision of *ICT Resources* front and centre in the empowerment equation (40 papers), and to this extent, CI operates from a deficit model of community empowerment. However, a substantial minority of papers (9) address CI issues through approaches other than the provision of ICT.

2. This focus on ICT would appear to be *technocentric*, but not *technodeterminist*.

3. The largest grouping of CI projects (20) is concerned with the empowerment of communities through interventions in, or analysis of, the relationship between the resources available to a community, the agency community members are able to exercise, and the legitimacy of those resources and that agency. *Legitimacy, Resources and Agency* would therefore appear to be the key theoretical concepts relevant to the empowerment of communities.

4. Of the above, 8 papers were concerned with knowledge resources that are *externally legitimated* and certified, and through accessing those resources sought to enhance agency. In contrast 13 papers were concerned with knowledge resources that are *internally legitimated* and give voice to the community's knowledge of itself.

5. *Agency* is interpreted by CI as a property of individuals in 14 cases, as a property of the collective in 11 cases, and as a property of institutions in 3 cases.

6. Whether Knowledge Resources are externally or internally Legitimated, and whether Agency is individuated or collective, has implications for *Structure*. Externally Legitimated Knowledge that enhances the Agency of individuals would appear to leave Structure intact. Internally Legitimated Knowledge that enhances the Agency of the collective may have the potential to restructure ongoing power arrangements.

7. With a couple of exceptions, CI would appear to be unconcerned with *Coercion*.

8. With relatively few exceptions, CI would appear to be unconcerned with *Translations* of interest as power circulates between actors. Where Translations of interest are addressed explicitly or can be clearly inferred, the concern is to align ICT Resources with user interests (5 cases), and to Translate the diverse interests of community members to construct "community opinion" (6 cases).

Each of the conclusions is of course ripe for contestation, exploration and elaboration at an empirical level and at a theoretical level, through a closer association of Community Informatics and the various traditions in the philosophical and social sciences that have addressed power and empowerment. Community Informatics and these other traditions will both benefit.

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Appendix: Notes on Abstracts and Papers.

Abstracts drawn from Stillman, L., T. Denision and G. Johanson (2009). *Prato Community CIRN Conference 2009: Empowering communities: learning from community informatics practice. Conference CD.* Monash Centre, Prato, Italy, Centre for Community Informatics Research.

Adams & Wolske, "Prairienet Community Network: 16 years of empowering communities through engaged informatics"

- Empowerment is associated with the deployment of Prairienet (Resources)

- Prairienet is associated with services to individuals (individual Agency)

- Prairienet is associated with network-effect services (collective Agency)

(Technical Resources – Legitimacy - Agency relation)

Bieniecka, "Community empowerment and community development as a way of empowering women".

- The relation between community empowerment and women's empowerment is considered (Agency + Structure)

(Agency – Structure relation)

Birowo, "The Use of Community Radio in Managing Natural Disaster in Indonesia"

- Empowerment is associated with the use of community radio in times of natural disaster (Resources)

- The way community radio is deployed is examined (Agency)

(Resources – Agency relation)

Brown & Adria, "Ambiguity and uncertainty in the last mile: broadband adoption in rural Alberta"

- Empowerment through broadband provision over the last mile is considered (Resources)

- Despite its provision, the adoption of rural broadband in Alberta has been low (Agency)

- Ambiguity and uncertainty by industry decision-makers and broadband stakeholders has contributed to this situation (Translations of Interest)

(Resources – Agency – Translations of Interest relation)

Carreon, "Participatory Budgets going online: trying to empower comunities using IT"

- Empowerment is associated with the provision of ICT for public participation in framing local budget priorities. (Resources)

- Community empowerment is associated with political participation (collective Agency + translation of interests)

- Collective Agency is dependent on political participation (individual Agency)

- Not mentioned - Governmental Legitimacy is associated with political participation (Legitimacy)

(Resources – Agency – translation of interest – [Legitimacy] relation)

de Carvalho, Matielo, Rodriguez & Planella, "Web 2 to empower communities: reviewing digital literacy in telecentre projects"

- Empowerment is associated with an improvement in social capital. (immaterial Resources)

- Social capital is associated with the provision of telecentres (material Resources)

- and the particularized use of Web 2.0 systems (Agency)

(Resources – Agency relation)

Chigoan, Roode, Nabeel &Pinnock, "Using Stakeholder Theory to Analyse the Smart Cape E-Government Initiative"

- Communal participation in identifying and planning a public access initiative is problematized

(Translations of interest)

Clark & Beaton, "Reciprocity of Ownership and Control of Community and Neighbourhood

Information and Data"

- The provision of sensitive data related to First World and Indigenous peoples is sometimes required (coercion)

- Community empowerment is associated with community control of community data. (community Agency)

- Community data should be constructed to include community interests (translations of interest)

- Community data may thus serve community purposes (resource)

(Coercion – Agency – translation of interest – resource relation)

Copeland, "Digital Storytelling: A Cross-Boundary Method to Address Issues of Conflict between Intergenerational Groups in Rural Communities"

- Empowerment is associated with the provision of Digital Story Telling facilities (Resources)

- Digital Story telling is associated with bridging boundaries between diverse rural groupings. (translations of interest)

(Resources – translation of interest relation)

Craig, "Breaking down institutional walls with ICTs"

- Empowerment is associated with the provision of educational ICT (Resources)

- Educational ICT are associated with personalized learning (individual Agency)

- Implementation is problematized through reference to the diverse interests of potential participants (translation of interests)

(Resources – Agency – translation of interests relation)

Dasgupta, "Empowering Communities with E-Governance Initiatives: A Comparative Study of Two Political Cultures in India"

- The provision and use of e-Governance facilities is considered (Resources)

- Community empowerment is associated with political participation (collective Agency)

- Governmental Legitimacy is associated with political participation (Legitimacy)

(Resources – Agency – Legitimacy relation)

Dension & Johanson, "e-Research Infrastructure and community research"

- Power is associated with control of the process of research, and the products of research, in conditions where research is conducted jointly by disparate parties with diverse interests. (translation of interest + Legitimacy + Agency)

- Systems that mediate this process are discussed (Resources)

(Translation of interest - Legitimacy – Agency – Resources relation)

Dhakal, "A Social Capital Framework to Assess ICTs Mediated Empowerment of Environmental Community Organizations in Western Australia"

- The empowerment of community organizations is associated with the provision of ICT (Resources)

- The empowerment of community organizations is associated with social capital (Resources)

(Circulation through social capital Resources and ICT Resources relation)

Dolnicar, "The potential of ICTs for minimizing and deepening the social inequalities"

- Empowerment is associated with the differential provision of ICT to those who are already powerful, as opposed to those who are less powerful. (Resources)

- The further empowerment of the powerful (and disempowerment of the powerless) is manifest across 4 dimensions - consumption, production, political engagement, and social interaction (Agency)

(Resources – Agency relation)

Elliot, "Empowering Indigenous learners in remote Australian communities"

- Empowerment of remote indigenous communities is associated with the provision of social and ICT educational interventions (Resources)

- These interventions intend to enable a two way transaction between western knowledge (externally legitimated) and indigenous knowledge (internally legitimated)

(Resources – legitimation – individual and collective Agency relation)

Farinosi, "Towards a Postpanopticon perspective: privacy, control and new ICTs"

- Surveillance is associated with CCTV (coercion)

- Surveillance is associated with SNS (Agency)

- Power is associated with surveillance as it is exercised differentially in the private sphere and the public sphere (individual Agency)

(Coercion – individual Agency relation)

Fawcett, "A tale of two homes: A preliminary assessment of the community information and technology needs of the rural poor in Ensenada Mexico"

- Community empowerment is associated with the provision of ICT (Resources)

- A model is proposed (INAM) to facilitate the selection of appropriate ICT (translation of interests)

- Not mentioned - Agency

(Resources – translation of interests relation)

Flipsen & van der Weide, "The Middle Out Approach"

- Empowerment is associated with e-education (externally legitimized knowledge resources).

- An educational strategy is suggested (to enhance Agency of communities/subjects).

- Education is linked to economic participation (individual Agency)

(Legitimacy - Agency–Resources relation)

Freistadt, "A Parallel Education: ICT centers and the Access Gap to Formal Higher Education for the Poor in Brazil"

- Empowerment is associated with the provision of educational and employment Agency services through community centres (Resources)

- Community centres are positioned in relation to higher education (structure and Agency)

(Resources – Legitimacy - Agency relation)

Gamage, "Reflective Practice in Digital Story-telling (DST): two case studies from Sri Lanka"

- Empowerment is associated with the provision of Digital Story Telling facilities (Resources)

- Digital Story telling is associated with personal and cultural expression (collective Agency)

(Resources – Agency - legitimation relation)

Gamage, "A Critical Assessment of the '1000 Telecentre Programme' of the e-Sri Lanka Initiative and its Effectiveness in Decreasing 'Digital Inequality'"

- Empowerment is associated with the provision of knowledge and culture through telecentres (Resources)

- A strategy is suggested to enhance Agency of communities/subjects in relation to telecentres (Agency of telecentres)

(Individual Agency – Resources relation) + (telecentre Agency – Legitimacy relation)

Garrido, Rissola & Rastrelli, "Can basic ICT skills help advance better employment opportunities for immigrant women in the European Union? A critical perspective"

- Empowerment is associated with the provision of ICT skills (resource)

- ICT skills are associated with economic participation (individual Agency)

- ICT skills are externally legitimized knowledge Resources (legitimation)

- ICT skills are also associated with internally legitimized knowledge Resources (legitimation)

(Resource – individual Agency – legitimation relation)

Gasiea, Emsley, & Mikhailov, "Selection of rural telecommunications infrastructure: an analytic

network process approach"

Empowerment is associated with the deployment of appropriate telecommunications technologies (Resources)

- A model is proposed to facilitate decision-making.

(Technical Resources – translation of interests relation)

Gies, "Social justice at the touch of a button? Some reflections on the use of ICT in government communication of human rights"

- Disempowerment is associated with the challenges faced by citizens in accessing social services through ICT. (Agency)

- Disempowerment is associated with system requirements for standardized, simplified inputs from citizens (Legitimacy)

- Empowerment is associated with the use of ICT to cost-shift the provision of services to users of ICT through the employment of citizen's labour. (Agency)

(Agency – Legitimacy – translation of interest relation)

Gomez & Gould, New Challenges for Libraries in the Information Age

- Empowerment is associated with access to knowledge through public libraries (externally legitimized knowledge Resources)

- An educational strategy is suggested (to enhance the Agency of libraries)

(Individual Agency – Legitimacy - Resources relation)

Grunfeld, "How iREACH has contributed to local communities"

- Empowerment is associated with the deployment of iReach (Resources)

- iReach has contributed to improved well-being in education, health, farming and general information provision. (Agency + Legitimacy)

- Women have been found to have particularly benefited (structure)

(Resources –Agency (knowledge) – Structure relation)

Jeff & Pal, "Technology Training & Empowerment: Aspiration & Employability for the Disabled in Latin America"

- Empowerment is associated with technology training centres for people with disabilities (Resources)

- Technology training centres are charged with providing coping skills (i.e. employment), and with providing transformation to aspirations. (Agency)

(Resources – Legitimacy - individual Agency)

Joshi, "Challenging Remoteness through Accessibility: Community Informatics of Rural Wings"

- Empowerment is associated with the provision of ICT for social services such as education, health, agricultural information (externally legitimized knowledge Resources)

- Video-links are briefly mentioned? (internally legitimized knowledge Resources?)

(Individual Agency – Legitimacy - Resources relation)

Lambert, "Can communities be empowered still with a 'top-down' approach to ICT conceptualization, design, and implementation? The case of mycommunityinfo.ca."

- Empowerment is associated with the provision of a portal providing access to the information Resources of local non-profit community organizations and arms of Government (informational Resources)

- The portal would appear to be financially sustainable (financial/material Resources)

- The portal was a top-down construction (Agency)

(Agency – Resources relation)

Lee, "An Integrated Approach to Community Technology Practice: Learning from Asset-based Community Development"

- Empowerment is associated with the deployment of community Technology Centres (Resources)

- A strategy is suggested to ensure the sustainability of CTCs (Resources)

- CTCs are associated with educational and ICT services to community members (individual Agency)

(Resources – Legitimacy - Agency relation)

MacCalla & Caesar, "Smart Community Building with Integrated Community Informatics"

- Empowerment is associated with the deployment of i-CIMSware (technical Resources)

- i-CIMSware is concerned with the provision of reflexive knowledge by the community of the community (Legitimacy + collective Agency)

(Resources – Agency – Legitimacy relation)

McLoughlin, "'Never failing to fail' - Reflections on co-construction as a means of socio-technical intervention"

- The empowerment of users of ICT through user-centred design strategies is considered (Agency)

- The user-centred development of sociotechnical systems designed to be deployed across multi-Agency environments in ways that are more integrated and citizen-centric are considered, and are not assessed as uniformly successful (Resources + translations of interest)

(Agency – translations of interest – Resources relation)

Malina & Thompson, "Engaging Eden: New media for youth involvement in local government decision-making"

- Empowerment is associated with the provision of ICT for public participation in framing local budget priorities. (Resources)

- Community empowerment is associated with political participation (collective Agency)

- Collective Agency is dependent on individual participation (individual Agency)

- Not mentioned – translation of interests

(Resources – Agency – [translation of interests] relation)

Martin, Walsh & Wilson, "A Social Informatics Intervention: theory, method and practice"

- The analysis is concerned with the dynamics of partnership formation in conditions where the co-construction of socio-technical systems requires the unification of internalized desire and externalized architectural frameworks.

(Circulation – translation of interest relation)

Masizana-Katongo & Morakanyane, "Representing Information for Semi-Literate Users: digital inclusion using mobile phone technology"

- Empowerment is associated with the deployment of mobile technologies to provide healthcare information on HIV AIDS to disadvantaged rural populations.

(Resources)

Miller, "Pedagogy, Telecentres & CTCs, and Community Informatics"

- Empowerment is associated with public participation in the urban planning process (communal Agency)

- A model is proposed to facilitate participation (translation of interests)

(Agency–translation of interests relation)

Nielsen, "How to make friends? Characteristics of existing communities that influence the role of social network sites in intra-community cohesion".

- Community empowerment is associated with the formation of a relation between offline and online modes of communication among community members (Resources)

- Cohesion within offline communities with a loose organisational structure, a sufficient number of weak ties and key members that actively promote the use of the SNS was found to occur (Legitimacy + Agency)

(Resources – Legitimacy – Agency relation)

O'Mara, "Empowering multicultural Australian communities through the use of information technology to communicate messages of health and community wellbeing"

- The empowerment of new and emerging communities is associated with the provision of ICT (Resources)

- ICT are associated with the provision of information related to health and well-being (individual Agency)

- The origins and relevance of the information Resources provided is problematized (Legitimacy)

(Resources – Agency – Legitimacy relation)

Petric &Petrovcic, "The structural and administrative factors of social cohesion, trust and participation in online communities"

- The relation between social aggregates and online communities is discussed. (Legitimacy)

- Social cohesion, trust and participation are found to be key variables (translations of interest)

- Group dynamics are found to be influential in determining key variables (Agency)

(Legitimacy – translations of interest – Agency relation)

Pscheidt, "Community aspects in the case of the ARIS in Mozambique"

- Empowerment of public educational institutions is associated with the deployment of an Academic Registry Information System (Resources)

- Empowerment of institutions and institutional users is envisaged (institutional Agency, user-community Agency)

(Technical Resources – Agency relation)

Raffl, "Stakeholder Integration in Open Source Development"

- Empowerment is associated with communal participation in open-source software development (communal Agency)

- Communal participation is problematized (translation of interests)

(Agency – translation of interests relation)

Saad-Sulonen & Horelli, "CI-assisted participatory planning as a perspective to

ICT-mediated participation: a case-study in Helsinki"

- Empowerment is associated with public participation in the urban planning process (communal Agency)

- A model is proposed to facilitate participation among diverse interests (translation of interests)

(Resources - Agency–translation of interests relation)

Sabiescu, "Collaborative digital storytelling as an intergenerational hub in the process of cultural self-representation in traditional communities"

- Empowerment is associated with the provision of Digital Story Telling facilities (Resources)

- Digital Story telling is associated with bridging boundaries between generations (translations of interest)

(Resources – translation of interest relation)

Selaimen, "The São Paulo community telecenters project - lessons for leveraging digital inclusion in Brazil".

- Empowerment is associated with the provision of information and culture through telecentres (Resources)

- Informal education is associated with the provision of information and culture (Agency + Legitimacy)

- Political participation is associated with the provision of telecentres (collective Agency)

(Individual Agency – Resources relation) + (collective Agency – Legitimacy relation)

Toland, "Exploring the relationship between regional culture and Information and Communication Technologies: an historical reflection"

- Empowerment is approached through examining the relationship between soft (social) networks and hard (ICT) networks, with particular reference to the recursion of Agency, structure and power.

(Circulations through all dimensions – translations of interest relation)

Trere, "The relations between the Italian Onda student movement and ICTs"

- The empowerment of a community organization through the deployment of ICT is to be investigated.

(Resources – communal Agency relation)

Wei, "Labour Cultural and Art Festival as an alternative media: Organizing by Migrant Workers for Communication Rights in Pi Village, China"

- Empowerment is associated with enabling Chinese migrant workers to express particular community culture independent from mainstream culture (collective Agency)

(Collective Agency – Legitimacy – structure relation)
Williamson, "The disintermediation of politics through social media"

- Empowerment is associated with the use of SNS for public participation in UK politics. (collective Agency)

- Governmental Legitimacy is associated with political participation (Legitimacy)

(Agency –Legitimacy relation)

Wilson & Martin, "Co-producing Telecare with the Community: Lessons from an Italian Case Study (The OLDES project)"

- Empowerment is associated with the provision of an ICT system for the use of older people (Resources)

- Empowerment is associated with the participation of older people in the design process (collective Agency)

(Resources – Agency – Legitimacy relation)

Wolske, "Citizen Professional Toolkits: Empowering Communities Through Mass Amateurization"

- Empowerment is associated with community centre social interaction (collective Agency)

- A strategy is suggested to resource this interaction through mass amateurization

(Resources [technical infrastructure] – collective Agency – Legitimacy relation)

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