

The Arctic and challenges of the exterior - Knowledge, ICT, and Autonomy

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Abstract

This paper examines the question whether ICT, and their carrying knowledge, pose a challenge to autonomy on the ways of living, and knowledge held by “Northerners” in more general terms. For this reason first it is examined what knowledge is in more general terms. Partially thereby a epistemological comparison between TEK and “western-rationalistic” knowledge is conducted. In a second step knowledge expectations embodied in ICT are examined. Special consideration is given to assumptions held in ICT. Furthermore, it is examined how realistic this threat from ICT to Northern autonomy is by taking a brief look into the infrastructural situation of ICT in the North. In a last step it is examined what from a political perspective autonomy can be and how ICT relate to this autonomy. The paper is summarised by a perspective that examines the character of ICT under conditions of the circumpolar knowledge and varying of forms of culture. It closes with an argument that suggests that the autonomy constraining character of ICT is not a necessary consequence. To avoid the negative consequences, however, dialogue and communication between “North” and “South” that appreciates the differences and likeness of both extremes is presented as a solution that can overcome the opaque character of ICT.

Key words: Autonomy/ Northern, Communication and Dialogue, Information and Communication Technology/ Information Systems, Innovation/ Northern, Knowledge

Introduction

Looking back into the literature that examines ICT and the Arctic areas (Lausala & Valkonen, 1999; Hu & Li, 2001; Pekkala et al., 2004; Beck et al., 2005) there is not much literature examining this topic from a knowledge perspective. With knowledge reference is given here in particular to that, which is held by the people of the North and that contained in ICT. Some literature that examines this question in the general perspective of indigenous people (Kamppinen, 1998; Tedre et al., 2006; Lieberman w/o year).

Given the currently in the circumpolar areas, but not only there, “hot” topic of “Traditional (Ecological) Knowledge” (T(E)K (cp. Nadasdy, 2006), the author has examined the relationship between T(E)K and ICT in a series of articles (Krone, 2007 b; Krone et al. 2008). These papers were preceded by an epistemological draft about the differences between TK and “western-rationalistic” knowledge (Krone, 2006). One of the results of these papers was that the often alleged dominance of western knowledge is not necessarily result of better explanatory power, but rather the way in which it is communicated and distributed. Based on this argument, in the current paper the question is

Are ICT a challenge to “Northern” autonomy, when beginning the examination from a “knowledge” perspective?

On a conceptional level this question is examined from three perspectives: The first perspective is that of knowledge itself, whereby it is analysed what “knowledge” is in more general, and how it relates to the circumstances under which it is formed. In a second perspective it is examined whether and how ICT are predicated by western-rationalistic conceptions of knowledge contained in software and infrastructure. In a last step it is then examined, how autonomy relates to ICT and knowledge. In this step the main area of interest is how the “opaque” character of ICT might be opened, by an awareness of “Southern” and “Northern” conditions of live, and how these are related to knowledge sets contained in ICT. Methodologically this paper is using a content analysis approach.

Perspectives onto ICT in the Arctic

In this chapter in a systematic way, the characteristics of ICT are researched from a knowledge perspective. In order to provide a frame for this question the examination starts with a suggestion of what knowledge is, and how it is formulated. Then it is examined what ICT are, and how well the Arctic areas are equipped with these infrastructural devices that are held to be important for development. In a last step then Autonomy is described and related to ICT, under the perspective of knowledge and their presence in the Arctic.

Knowledge

„For there to be knowledge and power there have to be persons, and for there to be persons, the North has to be inhabited“ (Ingold, 2007). In this statement it becomes apparent that knowledge, to take an abstraction, is dependent on communication among people of a dedicated spatial setting (cp. Barnes, 1995; Searle, 1995; Berger & Luckmann, 1999) and how people jointly define the meaning of the objects that are surrounding them; the process of knowledge formation.

By aligning knowledge and power Ingold on the one hand takes up a conference theme, while on the other hand pointing to a character of knowledge that is examined here. When taking up the “sense-making” (cp. Orlikowski & Gash, 1994; Buckingham Shum & Selvin, 1999) notion of knowledge formation, immediately some elements of subjectivity are entering the discourse about knowledge.

Taking up this subjectivity element, in line with Barnes (1995) and Hesse (1980), the author has suggested an argument in which knowledge of “Northerners”, TEK, and that of “Southerners” have very similar foundations (Krone, 2006). In their character science and TEK seem to rest on stories being told from generation to generation. Both sets of allegedly different knowledge perpetuate limited stocks of knowledge (Kuhn, 1996; Ingold, 2007). Thus, Krone (2006) suggested that there is no superiority of any mode of knowing (Cook & Brown, 1999). TEK and science rest on different premises of validity, and how validity is achieved, that is attached to both forms of knowledge and how it is formulated (Nadasdy, 1999; Krone, 2006).

TEK and science are embedded in different cultural modes of communication in general, and knowledge communication in particular. With Ong (2002) the author refers here in particular to the modes of assigning and maintaining validity by the means of oral communication versus written communication (Ong, 2002). Thereby written communication in particular has characteristics that allow it to take abstractions, and make those tradable in written communication by means of books and journals etc. (Ong, 2002; also Berger & Luckmann, 1999). To make here an absolute argument: Written knowledge allows for its permutation, and requires certain sets of methodology being followed in order to allow for validity (Nadasdy, 1999; Krone, 2006).

So what knowledge is then? For Barnes (1995) knowledge is a not 100 % matching description of nature in which relative fit of knowledge claims to experiences of the environment, understood as the physical and social, around human beings gain in importance as they are shaping humans knowledge (cp. Hesse, 1980; Berger & Luckmann, 1999). Knowledge, so Barnes, is part of and embedded in culture (Barnes, 1995; cp. Kuhn, 1996). If this argument is connected to that from Ingold, than „Northerners“, irrespective of their tribal connections, have a different sets of knowledge than „Southerners“(Ingold, 2006)!

Information and Communication Technology (ICT)

ICT, in all their broadness, shall be here first defined, and then scoped to the topic of ICT in the Arctic. When reference is given here to ICT the author takes up the combination of infrastructure and the utilisation of them for a given purpose. Thus, focus is here on Information Systems (IS).

IS are defined as “(...) system of communication between people. Information systems are systems involved in the gathering, processing, distribution and use of information. Information systems support human activity systems” (Beynon-Davies, 2002, p.4). Thereby human activity systems can be any kind of human interaction that is happening for a given purpose; organisations as well as states in this perspective can be considered as human activity systems (Beynon-Davies, op cit.); both are social endeavours after all (cp. Krone, 2007

a for the social origin of organisations in an act knowledge sharing). Information Technology, in contrast, refers to the technological side of the “gathering, processing, distribution and use” (ibid. p. 5) of information.

With this dichotomy there becomes an interesting element visible for the Arctic areas: If IS are supposed to support social interaction, how adaptable are those to different spatial settings (Tedre et al., 2006) as technologies seemingly have different meanings in different areas? On top it can be asked for whom and which communication flows those IS are predicated? Examining the innovation capabilities of ICT, Tedre et al. (2006) observed that their fit into other cultures is not assured (ibid. 128-9). IS have to be conceived as foreign to those cultures due to a lack of relevance “(...) to the local culture and society” (Tedre et al., 129). ICT are predicated and expect to have as counterpart written cultures (Kamppinen, 1998, 20). Tedre et al. show that there are inconsistencies in cultural terms that have to be accounted for when planning and implementing IS in other cultural settings than those of development and initial experience making.

If this were true, then the lack of ICT in the circumpolar peripheries (cp. Lausala & Valkonen, 1999; AHDR, 2004) could suggest that “Northerners” have had a choice to opt-out of the implementation of IS and IT. This is in fact not the case as Beck et al. (2005) have shown. Rather, there is a serious lack of privately available IT infrastructure. This phenomenon is not particular to a special country of the Arctic, but rather a symptomatic, it even characterising, element (cp. Lausala & Valkonen, 1999; AHDR, 2004). Reasons for this absolute lack of integration into the “global village’s” net of communication are manifold. Some reasons can be traced to the era of privatisation in the telecommunication-sector in general. Further reasons can be seen in the general shifts in the how and to whom telecommunication infrastructure is provided in particular (Mansell & Wehn, 2000, p. 190; ITU, 1999). An economic reason can be seen in the emergence of new service providers in case that those are also making pathways into Arctic areas, but also in general in their emergence. The economic reason is that those new providers, due to their private capital structure, have to have tighter control over their financial figures, as they are mostly traded on stock exchanges (Mansell & When, p. 191; cp. Cowhey, 1990 for the old ITU regime and national monopolies in the manufacturing of ICT oriented services and equipment).

ICT in the current form are dominated by science based knowledge sets (Beynon-Davies, while giving an introduction to IS in general, is a case in point). Additionally IS are founded on „Southern“, „central“ infrastructure experiences of designers of infrastructure, software and protocols which are the foundation for the nowadays actual form of IS. Often these designers lack experiences of other spatial, cultural, age settings, because to a large extent ICT design (infrastructure and software) is a „central“ activity that draws its resources also from central labour markets. Additionally it has been observed that software design in particular, and IS design in general, are becoming more and more activities executed by young persons (cp. Hawthorn, 2000; Zajicek, 2005). Thus IS pose a dual challenge to Arctic areas: On the one hand it is their strong western-southern knowledge impetus, on the other hand it is their lack that excludes the inhabitants of the Arctic areas from discussions and options to raise their needs.

Autonomy

In the field of politics autonomy is defined as the option to conduct and structure forms of life, culture, and in general terms society in a way that is compatible with societies desires unbiased from others.

If this is the starting point then the „North“ is already partially a society of its own, because

„Everyone's north is shaped by the peculiarities of their own biographical and historical experiences. Yet these experiences do overlap to a very considerable extent... Because of this commonality of experiences, it is possible for people all around the circumpolar North to converse with one another, and understand each other's point of view, to an extent unmatched elsewhere“ (Ingold, 2007, p. 12).

If Ingold's analysis is correct, and we connect this item to that of ICT and knowledge then three questions emerge

- 1) Can the North be autonomous given the influx of modern ICT?
- 2) Does knowledge inherent in IS not supersede „Northern“ knowledge?
- 3) Can ways be sought that allow for individual „Northern“ approaches to ICT adaptation of „Southern“ origin?

In respect to the first question an interesting phenomenon is observed. The "North", and the indigenous people living there, have shown already that they are well in a position to adapt to modern technologies (cp. Christensen, 2001, p. 13). This adaptation happened against a background of "westernized" indigenous people who are familiar with written culture forms of living. Moar (2003) has argued that in particular for the younger members of indigenous groups this co-living in two distinct cultural settings has caused considerable cultural frictions, and led to partial alienation from the elders (Moar, 2003, pp 159-161; cp. Lieberman w/y;). Thereby for ICT the same adage is applicable as for almost everything that is coming from the „south“: It has to be reworked or it fails (cp. Beck et al.). For knowledge, and the debate that was suggested here this argumentation is of utmost importance. It shows that the pragmatic criterion of truth of knowledge (cp. Hesse, 1980; Barnes, 1995) has a bearing for the discourse between „North“ and „South“ and options for autonomy realisation in the light of ICT and IS in particular, but also in more general.

The answer to the second question takes up this pragmatic criterion for knowledge, in that it shows that knowledge is a relative form of reality description, and communicated by different means (the primary oral vs. the primary written culture). Technical knowledge, as it is embedded in IS, becomes then only one description of reality. IS are shaping reality, granted (cp. Krone, 2007 a for one perspective resting in a knowledge based perspective as why IS implementation can fail), but they have to fit forms of living in the area where they are supposed to be adopted. These IS, and ICT in more general terms, then do not make sense per se, but need to fall on grounds that are receptive to them (cp. Christensen, 2001, p. 110-111; Tedre et al., 2006). This leads to an implicit other question: How much sense do ICT

make in the “Northern“ shared experience, and the implicitly held TEK there?

Answering this question, in the author's view also answers the third question: Considering the, but forgotten, commonality of TEK and „western-rationalistic“ there are options to allow for dialogue. However, the basic need is to extend the „sphere of experience“ of the North to „Southerners“. This means that the communication and experiences that are forming knowledge, that about which Ingold spoke in the beginning, have to become embracive; the homogeneity of the „North“ (or the “Northern Experience”) does have its root exactly in the landscape, and the interactions that scholars and we as inhabitants of the North have. But if the autonomy of the „North“ is endangered, if it has ever existed, by technologies that are brought from the „South“ it becomes necessary, and eligible, that the „North“ pursues a more autonomy demanding discourse of politics in order to keep abreast of the happenings in which the „North“ has been very often rather an object of discussion than an autonomous agent that can achieve its own aims.

In light of the overall changing conditions that the „North“ is facing, the culture and its carrying communication across the circumpolar Northerners render a vision necessary in which South and North begin to converse, too.

Conclusions? - or appreciating the difference

Summarising the arguments made above, it seems safe to argue that TEK as well as western-rationalistic knowledge rest on conversations, and stories being told. They differ dramatically in their formation and the maintenance of validity, which renders TEK from a western perspective less valid. Likewise, and as well important as argued above, the cultural setting in which either set of knowledge is formed will be carried forward in the artefacts that are used by inhabitants living in both spatial settings. ICT, or here in particular IS, render a challenge to the „Northern“ knowledge, because they are so deeply embedded in „western-rationalistic“ knowledge that they expect a similar cultural setting. If this is not given, there is a great deal of risk attached to their adaption by the local people in general terms. In the „North“, additionally, infrastructural and political decisions have led to a very weak, to non-existent integration in the global village, when taking a look into the periphery of the periphery. Autonomy of the „North“ is a scarce good that is endangered by ICT and their inherent cultural expectations, and the knowledge contained in them. To allow for a continuation of „Northern“ autonomy new challenges come up.

Taking up the discourse about innovations in the North (Aarsaether & Suopajärvi, 2004), it is suggested that „Northern“ autonomy, meaning now everything that is in the circumpolar or Arctic areas, is dependent on joint actions by all societal groups to allow for innovations. Innovation are defined as the

“[...] the process of bringing new solutions to local problems, as responses to the challenges presented by the transformation of the increasingly globalising and knowledge-based economy. Innovations are new practices creating better conditions for living, employment, and economic activity in the localities” (ibid., p. 16).

Innovations in this model are dependent on the interaction of the public sphere, the commercial sphere, and the local civil society (ibid. p. 16). This means that innovations are discourse oriented endeavours, a tradition that is according to Ingold very much alive (op.cit.) in the „North“. Considering innovations for a „Northern“ friendly IS/ICT infrastructure key-stakeholders would not be only be those living in these circumpolar areas, but also those from the South.

Reviewing the legacy of the public and commercial sphere in the „North“ in respect to ICT the picture is less cosy as shown. One explanation for this phenomenon can be that the homogeneity in the experiences is exclusionary to „Southerners“. In part because those lack the imaginary what it takes and that it can be an enriching experience to take a life in the Arctic under the constraints of the landscape, the climate, and culture. Another part of an explanation is that the South has to learn to accept and appreciate the differentness of the „North“ as a „sphere of experience“ and „discourse of and in knowledge“ that goes beyond „Southerners“ apprehensions.

In simple words there is need for a re-evaluation of the basic concepts that hold societies in more general together: These are shared cultures, shared languages and solidarity. The „North“ still knows how these things look like, exactly because of the shared experience as Ingold argues. The South has to relearn this lesson, and can take some examples from the „North“ understood as a region in which culture is similar because of conditions of the exterior, and not for state reasons.

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