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Investigating Hybrids and Coproductions: Epistemologies, (Disciplinary) Politics and Landscapes

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Abstract

This article investigates hybrids and processes of coproductions and their relevance for geography. The examination consists of three levels, namely the level of philosophy of science and sociology of knowledge, the level of scientific disciplines, and the level of theory, its object and empirical research; these levels serve in turn as referential scopes for each part. The first part shows how hybridization of various ontologies and epistemologies – expressed in a resulting matrix – can and does equip the researcher with very different images of what is out there and how we know about it. The second part focuses on interstitial spaces in between disciplines. Two analyzed examples are political ecology and environmental security. The third part subsequently elucidates ways through which disciplinary organization of knowledge (physical geography vs. human geography) influences our perception of what constitutes their allegedly neutral objects of study with regard to spatialization – landscapes vs. regions. In the final part, a framework for an analysis of hybrids and coproductions is designed.

Key words: hybrids, coproduction, ontology, epistemology, disciplinary politics, political ecology; environmental security, landscapes; regions

Initial Insights and the Structure

Metaphors play a particularly important role in both natural and social sciences. They enable us to “imagine” a concept, a model or a theory, rather than just merely describe it through words and linear sets of propositions. When it comes to the enterprise this article embarks upon, it can also be imagined through a metaphor. This metaphor is based on the notion of three different levels, namely the level of philosophy of science and sociology of knowledge, the level of scientific disciplines, and the level of theory, its object and empirical research. These three levels represent the *scope* of investigation. As far as the *object of* investigation is concerned, it will be to explore hybrid systems and processes of coproduction that constitute them.

So what are hybrids and processes of coproduction and what do they signify? Hybridization can be imagined as a deliberate effort to dissolve allegedly fixed

boundaries between various artificially created systems which we tend to take, on the basis of a predominant discourse or our common sense, for granted as separate or isolated from one another. As a result, we end up having hybrids, i.e. non-linear entities that are not based on causal, but constitutive relationships. The causal arrow ceases to play its role of navigating us from an independent to a dependent variable as entities are mutually constituted – existing together, no one ontologically preceding the other. Examples of hybrids in this sense subsume hybrids created by the dissolution of boundaries between nature and society, facts and norms, ontology and epistemology, disciplines etc.

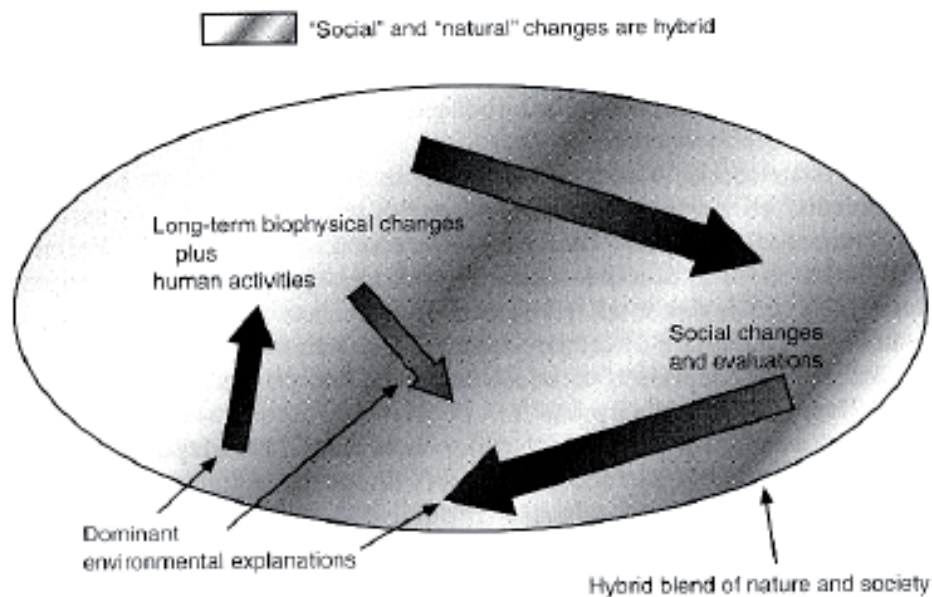


Fig. 1. Hybridization and hybrids (Forsyth 2003: 195).

The process of hybridization, i.e. the dissolution of artificial boundaries and linear arrangements, is consequently itself a prerequisite for understanding processes through and purposes for which hybrids are constituted. These processes are generally referred to as coproductions. Sheila Jasanoff (1996: 393) defines coproduction as “the simultaneous production of knowledge and social order.” One can invoke Foucault’s notion of the power/knowledge nexus and the way how one shapes another. Similarly, Bruno Latour (1993) analyzes the emergence of “quasi-objects” on the interface between nature and society. Ecological facts and discourses require for their existence political practices pertaining to environment and vice versa; put it simply, they are mutually embedded, or in the terms of reflexive sociology, mutually constituted.

As to the structure of this investigation, the first part tackles the level of philosophy of science and sociology of knowledge, namely shows how hybridization of various ontologies and epistemologies – expressed in a resulting matrix – can and does equip the researcher with very different images of what is out there and how we know about it. The second part subsequently focuses on an interesting topic

(and the level) of disciplinary hybrids, i.e. interstitial spaces in between disciplines. Although one could be tempted to see disciplinary hybrids as independent of the influence of “disciplines-proper”, the reverse is true. The examples of *political ecology* and *environmental security* were selected precisely because we believe that these two disciplinary hybrids are at the same time excellent specimens of disciplinary politics. That is to say we still find ourselves in the situation of having two largely isolated interdisciplinary hybrids, with the selection of one or the other depending on whether one comes from the disciplines of political science/IR (environmental security) or the disciplines of geography/ecology (political ecology), in spite of a significant substantive overlap between both of these hybrids. The third part in turn deals with hybrids and coproduction on the level of theory, its object and empirical research. The aim is to elucidate ways through which disciplinary organization of knowledge (physical geography vs. human geography) influences our perception of what constitutes their allegedly neutral objects of study with regard to spatialization – landscapes vs. regions. In order to overcome such parochialism, we consequently propose a hybrid object to be studied – *cultural landscapes*. As the following part on spatialization points out, cultural landscapes are hybrids coming into being by the coproduction of the physical-spatial and social-spatial. Since the backbone of this article is a brand-new topic of hybrids and coproductions at three different yet interconnected levels, our final intention is everything but to close and shelve this investigation. It is for this reason that the final part is “in lieu of conclusion” instead of conclusion-proper: its purpose is to design our own framework for an analysis (and a subsequent, final synthesis) of hybrid systems and processes of coproduction.

Setting Out for a Sail: Ontology-Epistemological Matrix as a Propeller

This section tackles an often avoided level of philosophy of science and sociology of knowledge. What is here meant by philosophy of science is a systematic study of ontological and epistemological questions, which is in itself closely connected to questions regarding one’s possibility of knowing about the world as well as the role of knowledge in this process. The latter is the domain of sociology of knowledge. It is argued that every empirical study ought to be able to explicitly show its connection to this level, thereby avoiding the danger of making implicit and therefore in many cases unsubstantiated and/or contradicting ontological and epistemological claims. Since the scientist’s perspective is always somehow anchored and derived from their stance towards ontology and epistemology, this section primarily focuses on an explication of this problématique. Possible ontological and epistemological positions are summarized in a matrix that includes six different orientations/hybrids which in turn create three schools of thought. Subsequently, each school is being examined.

Ontology, as the theory of being, usually comes first. It poses the question of “what is out there, in the world?” As to the word “world”, it signifies, in line with main argument of the article, the reality comprising hybrid sui generis biosocial entities. Nevertheless, ontology *per se* is not sufficient: one needs to ask a different yet interrelated question “How do we know about it?” It is epistemology, or the theory of knowledge, that deals with the role of science and scientist in the process of knowledge construction – or discovery, depending on one’s epistemological stance.

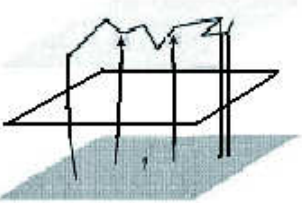
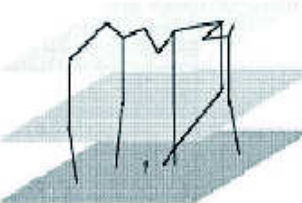
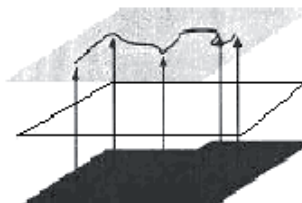
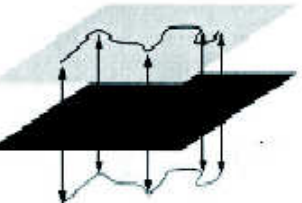

		e p i s t e m o l o g y	
		<i>non-constructivist (naïve)</i>	<i>constructivist</i>
o n t o l o g y	<i>mind-independence</i>	<p style="text-align: center;">1A. naïve empiricism</p>  <p style="text-align: center;">representations scientists and scientific work the world</p>	<p style="text-align: center;">1B. constructivist empiricism</p>  <p style="text-align: center;">representations scientists and scientific work the world</p>
	<i>mind-dependence</i>	<p style="text-align: center;">2A. naïve realism</p>  <p style="text-align: center;">representations scientists and scientific work the world</p>	<p style="text-align: center;">2B. constructivist realism</p>  <p style="text-align: center;">representations scientists and scientific work the world</p>
	<i>mind-dependence</i>	<p style="text-align: center;">3A. naïve interpretivism</p> <p style="text-align: center;">-</p>	<p style="text-align: center;">4A. constructivist interpretivism</p>  <p style="text-align: center;">representations scientists and scientific work the world</p>

Fig. 2. The hybridization of ontology and epistemology, the ontological-epistemological matrix (inspired by Marsh and Furlong 2002; Sismondo 1996: 6–7, 79; Ben-Ze’ev 1995: 50).

The actual matrix of 3×2 is ontologically based on the distinction between mind-independence and mind-dependence. Whereas the former asserts that scientific objects exist independently of the observer (mind-independence), the latter is being centred on the notion of mind-dependence, i.e. the existence of scientific objects as dependent on mind of the observer. As far as natural sciences are concerned, a large number of researchers will find themselves aligned with mind-independence. As there will be shown, the realm of social sciences is the murky wa-

ters and many researchers opt for mind-dependence. The epistemological distinction in the matrix rests on the difference of whether knowledge is actively constructed by scientists (anti-foundationalism) or whether scientists play in this process a role of transparent translators with minimal power to intervene to this process (foundationalism).

Positions 1A and 1B are empiricist ones. They are based on mind-independence ontology; natural and social sciences are believed to be analogous. The observer assumes an objective status and there is a widespread belief that an impartial observation is not only possible, but even desirable since any projection of one's values threatens the entire research program. Empiricism is usually associated with quantitative methodology, 'hard data', and 'thin description'. The difference between naïve and constructivist empiricism lies in sequence of research stages. While the former unfolds through the formulation of a hypothesis, data gathering (induction), their operationalization, analysis and generalization from which a theoretical model is created and subsequently tested, the latter gives more epistemic power to scientists and usually starts with formal deductive reasoning (a construction of a theoretical model) and it is only then that the model is being empirically tested. (Marsh and Stoker 2002; Sellars 1997; Ayer 1966)

In regard to the positions of 2A and 2B – naïve realism and constructivist realism – it shares quite a few features with empiricism: it is premised upon mind-independence ontology, sees natural and social sciences as analogous and the aim of scientific conduct are law-like generalizations. Because of the above similarities, some authors are wrongly led to conflating empiricism with scientific realism. (e.g. Wendt 1999) However, the crucial difference stems from a competing opinion of what can be observed and thus researched. Unlike empiricism which claims that only observable entities can be objects of scientific inquiry, scientific realism makes causal statements about underlying structures, even if these structures are directly unobservable. Scientific realists give structures causal powers and argue that positing their existence gives us the best explanation of action. There is, however, also difference between naïve and constructivist realism (modern critical realism in particular): while the former largely brackets the intervention of the scientist in a research process, the latter acknowledges the fact that scientists actively construct knowledge and thereto, agents and structures are conceptualized as mutually constituted. (Wight 2003; Sismondo 1996; Sayer 1992; Giddens 1984; Bhaskar 1979)

The final school of thought under the microscope is a broad church of interpretivism. Interpretivism is simultaneously based on mind-dependence and anti-essentialism. With regard to the former, such a claim has caused a lot of confusion; some critics of this position in philosophy of science go so far as to claim that interpretivism believes in the impossibility of the cat existing outside the discourse. (Wendt 1999) In order to put things right, there need to be distinguished between what John Searle (1995) calls "brute facts" and "social and institutional facts".

Many interpretivists do not deny the existence of physical entities – i.e. brute facts – independently on one’s beliefs. As for “social and institutional facts”, such as the institution of money or marriage, or a cognitive biosocial hybrid of a landscape, these can only be referred to when people intersubjectively believe in their existence. That is why social or institutional facts depend on one’s beliefs; they are mind-dependent. Similarly, anti-essentialism refuses the idea that physical and social entities become objects of study because of their allegedly inherent features.

As far as the epistemological axis of interpretivism is concerned, the position 3A – naïve interpretivism – needs to be dismissed since the combination of ontological mind-dependence and epistemological non-constructivism is blatant *contradictio in adiecto*. The position 3B – constructivist interpretivism – can be further subdivided according to whether agents or structures possess greater relative weight in one’s interpretation. The first group can be labelled as ‘actor-based approaches’ and includes phenomenology, hermeneutics and Geertzian thick-description-based ethnography. The centre of the focus is the meaning and interpretation of social phenomena (for the employment in natural science, see Woolgar 1983). As Geertz, following Max Weber, claims:

“The man is an animal suspended in the webs of significance he himself spun ... Our formulation of other people’s symbol systems must be actor-oriented – they must be cast in terms of the interpretations to which persons of a particular denomination subject their experience ... the ethnographer ‘inscribes’ social discourse, he writes it down. In doing so, he turns it from a passing event, which exists only in its own moment of occurrence, into an account, which exists in its inscriptions and can be reconsulted.” (Geertz 1973: 5,14–15,19)

Geertz (1973: 21) carries on by suggesting that thick description is microscopic – the locus of the study is not the object of the study: “anthropologists don’t study villages, they study in villages.”

The second cluster subsumed under the banner interpretivism consists of structuralist and post-structuralist approaches. Their research focus is usually directed at constitutive discursive structures; somehow contrary to structuralism, post-structuralists generally believe in inherently open and fragmented structural systems where there is always space for change to occur. It is the latter perspective that underpins our investigation. As in the case of the previous group, these approaches are very heterogeneous and it is hard to make any far-reaching generalizations about them. Post-structural approaches will be explored throughout the text, in the final two sections in particular, by an examination of the scholarship of Bruno Latour, Michel Foucault and Edward Soja.

Getting (Disciplinary) Politics Involved: Political Ecology and Environmental Security as Two Examples of Coproduction

Recent scholarship on the link between the realm of politics and the environment is fragmented. The two most recognizable strands are represented by discourses within the fields of *political ecology* and *environmental security*. A definitional and conceptual analysis reveals, surprisingly, a significant substantive overlap between the two discourses. The obvious question is, then, why do we have two substantively similar discourses? The explanation becomes clear when the disciplinary affinity of contributors to these discourses is examined. While political ecology has emerged as a field from the discipline of Geography, environmental security can be seen as a field going independent from its original confines of disciplines of Political Science and International Relations. Disciplines thus play the role their name suggests: discursive policing, or disciplining. (Foucault 1981)

The term *political ecology* can be understood in many ways. From the “managerial perspective”, it is deemed to concern the social and political conditions surrounding the causes, experiences, and management of environmental problems. (Blaikie and Brookfield 1987) Another account tends to conflate it with the term “politics of ecology” referring to political activism and social movements embracing Deep Green Environmentalism. (Atkinson 1991: 18) Finally, as Peter J. Taylor and Brian Wynne (1979: 20) propose, political ecology should be seen as the politics of the application of ecological science. However, none of the above perspectives deals with notions of hybrids and coproduction. As a result, valuable insights of science studies or science-policy are avoided. A definition compatible with the aim of this article is provided by Tim Forsyth (2003: 4) who suggests that the term “critical” *political ecology* “may be seen to be the politics of ecology as a scientific legitimization of environmental policy.” Such a definition is highly relevant inasmuch as it takes onboard the idea of socially-constructed science, be it constructivist empiricism, scientific realism or interpretivism. It imagines nature, ecology and politics as socially coproduced hybrids.

Reflecting on the term *environmental security*, an evolution of the term in the sense we nowadays understand it can be explicated by focusing on the disciplines of Political Science and International Relations and their intellectual development after the Cold War. (for an overview of original scholarship on environmental security in the 1980s, cf. Dalby 2002: 16–19) The subfield of security studies has been largely transformed from the realm almost exclusively dealing with the notion of national security into the more diverse waters. The major transformation has consisted in so-called “deepening” and “broadening” of security. With regard to “deepening”, the referent point is no longer the nation state, but also individuals, communities, or local/regional/global ecosystems. What is more, the “broadening” of security studies leaves us with at least five different sectors – political, economic, societal, environmental, and military- instead of an originally dominant military sector. (Buzan, Waever and Wilde 1998; Krause and Williams 1997) As a result,

a distinct research agenda of environmental security has emerged. It can be pointed out that environmental security directly challenges previously dominant ontology of the nation state and is largely based on an ongoing anthropological turn, which has opened up a larger canvass of questions appertaining to who is insecure and what their sources of insecurity are. (Dalby 2002: xxiii) Not only ontology undergoes a significant shift – epistemology does follow and reflects the fact that, in order to understand a socially constructed production of danger, interpretive epistemologies and methodologies need to be employed. (Duvall, Weldes and Laffey 1999)

Both portrayed discourses intersect in their attempt to investigate the connection and interplay between previously separated scientific and political agendas. It is for this reason that both of these agendas are here treated as socially constructed hybrids. What is challenged is the perception that the realm of environmental politics can be separated from assumptions and principles of environmental science or ecology. The strategy of examining both agendas as largely independent stems from the conviction that politicians do not need to understand the issue in its biophysical substance. The fallacy of this point of view is to portray science as detached and isolated from the realm of political practice, thereby avoiding the politics in the creation of the science itself. (Forsyth 2003: 9) As Jasanoff (1996) points out, however, the two are in fact inseparable, and her argument is encapsulated in the notion of coproducing social order (through a political process), with its aim of creating new societal norms, and knowledge (through a scientific process), with its simultaneous objective of creating scientific facts.

Getting a Landscape Involved: Hybridization of Physical/Social, Culture and Spatiality

To begin with, a seemingly innocent question begs to be asked: What is a landscape? Since the signifier of landscape is used very broadly in various intersecting individual, formal and generic meanings, both as a common word and a geographical term, we suggest that an (open) list concerning potential meanings – or the signified – will be more useful than a closed definition. The meaning of a landscape can thus be associated with:

- Representing scenery.
- Observed territory in a single view.
- ‘Way of seeing’ rather than as an image or an object. (Cosgrove 1998)
- Human environment, human ecology (e.g. Barrows 1923; Haggett 1983), the link of people and land.
- Pattern of landscape ecosystems at choric/regional level (Troll 1939), i.e. the complex of causal and reciprocal connections between biological communities and their environment in a particular section of landscape, a unifying approach to the natural science with social geography.

- Spatial product of socio-economic production, reproduction and consumption – complex metabolism between the nature and the society.
- Territorial infrastructure is constructed as a vital organizational landscape to facilitate social production and reproduction. Relationship between economic production, social reproduction and political governance are reconstructed – deindustrialization, urban sprawl, role of the cities (from welfare to workforce), cities (Taylor 1996) are replacing states in the construction of social identities, social production rather than reproduction.
- Distinct association of forms, both physical and cultural (Sauer 1925): landscapes are products of cultures and also reproducing them through time, cultural region includes its matching landscape.
- Iconography, text (Cosgrove and Daniels 1988), double encoding of landscapes – wrapped in another representation (Crang 2001). Literary landscapes, multiply mediated environments. Landscape as property (Cosgrove and Daniels 1988), owned by those beholding it; capturing and controlling the land through representation of it as landscape in maps and in paintings – and through fashioning landscapes on the ground using design and architecture. The landscape then, far from being neutral and inert, has social and cultural meanings, a symbolism – an ‘iconography’.
- Simulacra (Clarke and Doel 1994; Baudrillard 1988)
- Theatre, dramaturgy (Cosgrove and Daniels 1993)
- Land management framed by state and shaped by economy. (Blaikie 1985)
- How politics as policy of resource management, control over the environment is discursively constructed. (e.g. Leach and Mearns 1996; Moore 1995)
- Implies a collective shaping of the earth over time, reflect a society’s – a culture’s – beliefs, practices and technologies (Crang 2001), shape and shaping the people living there, landscape is a bank of cultural memories.
- Regional personality or a *genre de vie* expressed in landscape (Vidal de la Blache 1921), The Annales School.
- A palimpsest – landscape is the record of change, as cultural values change so new forms is required (Crang 2001), includes past practices and knowledges, series of layers – abiotic, biotized, biotic, anthropized, anthropic, noospheric.
- Cultural landscapes as other spaces/places, e.g. regions are constructed both materially and discursively, and each construction affects the other. (Allen, Massey and Cochrane 1998)

On the basis of the above heterogeneity of potential meanings, majority of which emphasize biosocial hybridity of landscape, this section argues that a landscape as an object of study needs to be investigated by both physical geography and human geography, and perhaps the best, by interdisciplinary employment of both simultaneously. Consequently, the division that is sometimes being made between regions as objects of study for physical geography and landscapes as objects of study for human geog-

raphy is seen as artificial and needs to be problematized as such. As the first part of this analysis suggested with regard to epistemologies and ontologies and the second part in respect of the nexus between disciplinarity, politics and science, the boundary between what is natural and social is – once again – precisely what is being contested. In other words, once we accept that humans imagine, construct and intersubjectively share representations of their living space, where, then, to draw the boundary between landscapes and regions? Aren't landscapes and regions just different names for the same areas, depending on whether one approaches these areas from the *discipline* of physical or human geography? Is there any justification for the correspondence between a shift from landscapes to regions (i) and a shift from hyperrural to hyperurban (ii), as the Czech disciplinary practice of geography has suggested?

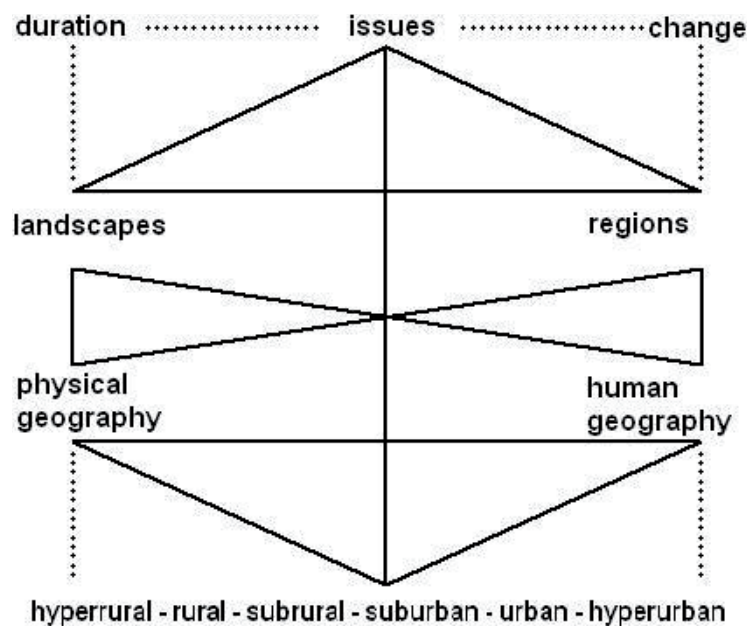


Fig. 3. Domains of Czech physical and human geography.

Physical and human landscapes have different geometry which is a reflection of the discipline one uses to look at these areas. Whereas the geometry of physical landscapes is premised upon landscape ecosystems as sites/tops, topochores, micro/meso/macrochores with isotropic, gradient, vector and mosaic horizontal pattern, the geometry of human regions rests, on the other hand, on nodal, formal and vermicular patterns. We suggest that, in line with the overall argument concerning hybrid systems with deconstructed boundaries, the best way of representing geographical areas is to speak about *cultural landscapes* as intersections of physical landscapes and human regions. By the same token, we maintain that cultural landscapes can be as much rural as they are urban. As far as the disciplines are concerned, this move means injecting still heavily physical-geography oriented landscape ecology with a dose of human geography. The following figure demonstrates this strategy on the example of cultural landscapes of the Czechlands:

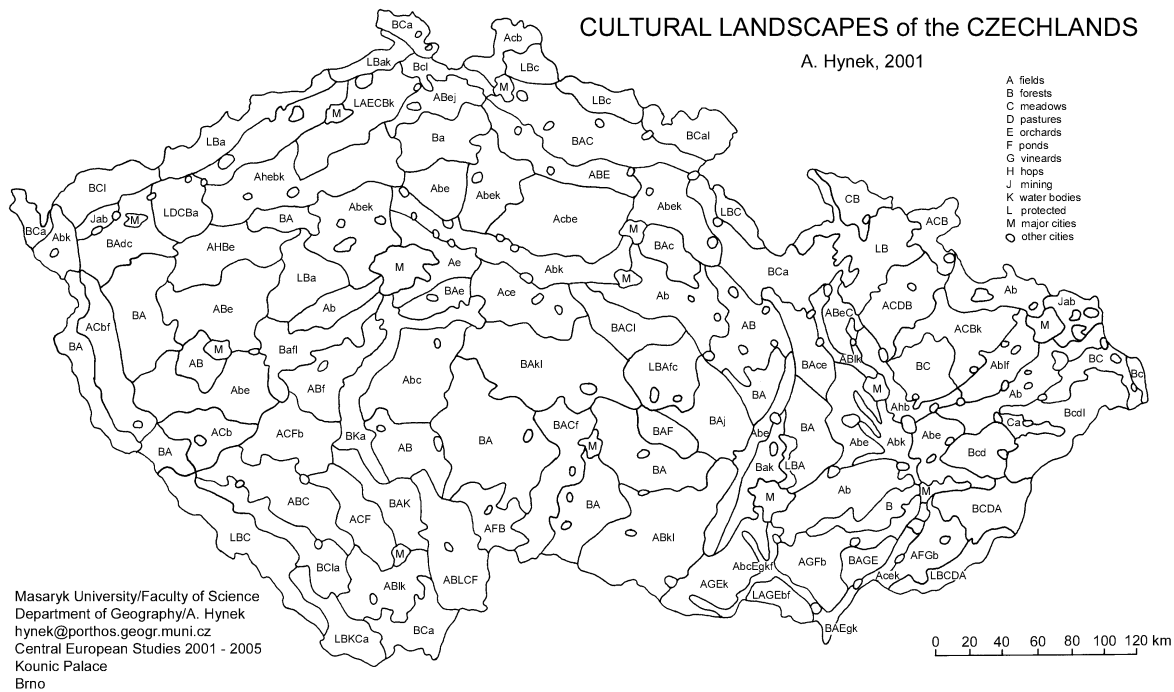


Fig. 4. Cultural landscapes of the Czechlands/Czech Republic.

The notion of landscapes and regions – and cultural landscapes as their hybrids – is inextricably tied to the phenomenon of spatiality. Derek Gregory’s (2000) distinction between four different senses of what spatiality represents is arguably the most authoritative account and it further confirms the difficulty to separate the human from the physical: 1. In the existentialist tradition, as epitomized by Pickles (1985), spatiality refers to places and spaces in our immediate experiences, to constellations of relations and meanings we encounter during our daily practices. This tradition of ‘situatedness’ is close to Geertzian significance of understanding the meaning within a particular cultural context; 2. In the structural Marxist tradition, spatiality has the function of identifying linkages and correspondences between social structures – i.e. modes of production and/or social formation, and spatial structures. Spatiality can thus be imagined as the dyad of presence-absence with regard to spatial structures and participation-exclusion in respect of social structures; 3. In the neo-Marxist and structuration (not to confuse with structuralist) tradition, Soja (1985) further unfolds Lefebvre’s vision of spatiality and socially produced space by claiming that all space is not socially produced, but all spatiality is. This argument feeds into Giddens’s (1984) assertion that space has its own intrinsic nature as well as to his claims that in human geography, spatial forms are always social forms and spatialities can thus be considered spatial configurations of social life; 4. Within the post-structuralist tradition, especially the part imbued with Deleuzian and Foucauldian thought, spatiality is represented by ways in which particular subject-positions are constituted and particular identities manufactured. It is the nexus of power/knowledge that assumes the central position in these accounts. E. Relph thus (1981) uses the P/K nexus as a starting point for distinguishing between four different sorts of space on the basis of our

knowledge about space, as produced by different relationships one can have towards places: a) pragmatic space organized by our bodily situation, b) perceptual space based on observing through our intentions, c) existential space created by cultural structures and our perceptions, and d) cognitive space through which we abstractly model spatial relationships. Additionally, D. Harvey (1996) maintains that spaces and times, or rather space-times, are not external coordinates, but are contained within different processes that effectively produce their own forms of space and time.

This section has showed, by screening the four different lens of what spatiality is, the impossibility of separating the physical-spatial from social-spatial. The purpose of this section is analogous to Latour's (1991, 1993) efforts to spell out his actor-network theory, i.e. to problematize all the usual boundaries between things and humans, culture and nature, tradition and modernity as well as inside and outside.

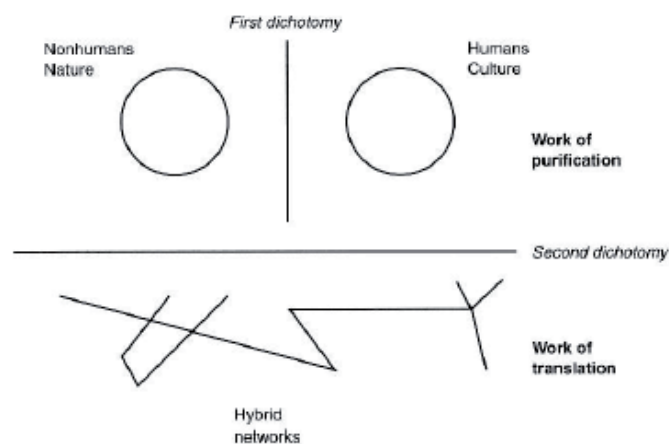


Fig. 5. Dichotomies, boundaries and hybrids (Latour 1993: 11).

An alternative take thus consists in the assumption that the world is a series of acts of heterogeneous engineering, emphasizing the role of mediaries and intermediaries, or hybrids. Having such a vantage point problematizes the act of a fixed representation, as the 'reality' becomes a kaleidoscope of different representational modes. This perspective also offers a better hold on interactions between nature and technology, thereby providing a means of understanding space as both a producer and a product of social order. Moreover, the cultural turn has blurred the artificial distinction between the 'economic', the 'cultural', and the 'political', which all need to be understood as different (analytical) parts/subsystems of the same whole.

In Lieu of Conclusion: Designing a Framework for an Analysis of Hybrid Systems and Processes of Coproduction

Where does all this leave us? As the title of this section intimates, the function of this part is not to close the investigation, but, on contrary, to keep it open. Therefore, these lines can be read as a reflection on how to study hybrid systems and how to un-

derstand various processes of coproduction. So how can we study hybrids and processes of coproduction? Our framework, introduced in this final part, represents a metatheoretical perspective that is designed to analyze this 'reality', or rather various regimes and representations of reality in the fashion that would not impose artificial 'blinkers' on what is being studied. It draws its intellectual inspiration from Edward Soja and Michel Foucault, though our framework ADDS A represents new quality and heads to a largely uncharted territory. The inspiration by Soja stems from his concept of "Thirdspace" (Soja 1996), which the author centres on the notion of trialectics of being, i.e. the claim that the ontology of being can only be interpreted in its interlocking entirety of spatiality, historicity and sociality. Thirdspace is a way how to think about 'reality', it is itself a hybrid between mental and material spaces of conceived and perceived space, but – at the same time – transcends both. (Soja 1996: 31)

Everything comes together in Thirdspace: subjectivity and objectivity, the abstract and concrete, the real and imagined, the knowable and the unimaginable, the repetitive and the differential, structure and agency, mind and body, consciousness and the unconscious, the disciplined and the transdisciplinary, everyday life and unending history. Anything which fragments Thirdspace into separate specialized knowledges or exclusive domains – even on the pretext to handling its infinite complexity – destroys its meaning and openness (Soja 1996: 56–57).

Moreover, Soja also underlines the importance of relations between space, knowledge and power. The author here draws explicitly on Foucault's space-centred version of knowledge/power, known as heterotopias. Power is not viewed by Foucault as a damaging, negative force stemming from some centres (the government), but as ubiquitous medium through which a multiplicity of power relations is being exercised at all levels. The function of knowledge is to legitimize this power: as a result, power and knowledge constitute and further reinforce one another since scientific discourses can be seen as sites of social power and rationalities to govern (at all levels) as sites of semiotic power. (Foucault 1991; Gordon 1980) Heterotopias can then be imagined as the P/K nexus which goes spatial. Foucault (1986) differentiates heterotopias from utopias: while the former refers to completely unreal spaces, the latter signifies real spaces that are simultaneously real and imagined. As Katz (2001) points out, Foucault's heterotopias can be conceived of as re-workings of space by forces of globalization and effects of technology.

"Lived space is heterogeneous, heterotopias are 'real' spaces within social spaces whose functions are different or even the opposite of others in landscape of power. They juxtapose several spaces or sites that are 'incompatible', and so 'function' either to create a space of illusion that exposes the partitioned spaces of everyday life as illusory, or to 'create a space that is other' as ordered as our everyday spaces are 'jumbled', the latter is the heterotopia of 'compensation.'" (Katz 2001: 93–94)

These are the intellectual influences concerning our analytical framework: the framework that first analyzes in order to make a final synthesis, comprising from previously gained partial analytical insights.

ESPECT & TODS

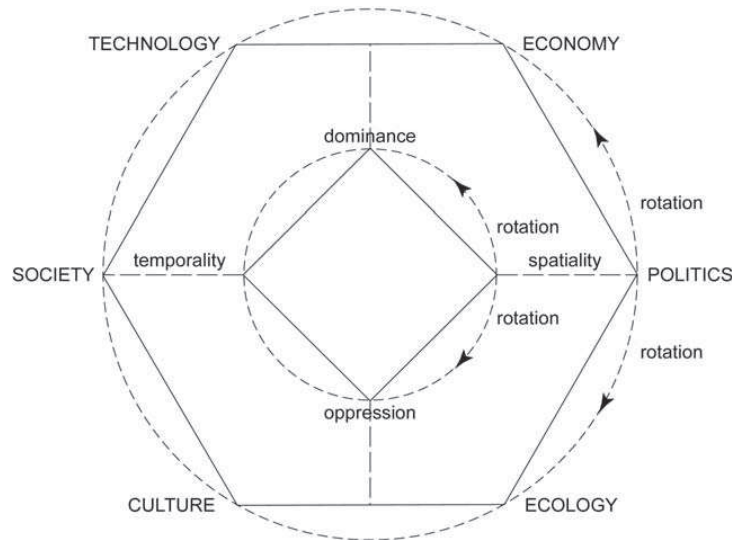


Fig. 6. ESPECT & TODS: The framework for an analysis of hybrid systems and processes of coproduction.

The matrix of the model consists of six main poles through which ‘reality’ is often depicted, though usually in isolation from one another: **E**(conomy)-**S**(ociety)-**P**(olitics)-**E**(cology)-**C**(ulture)-**T**(echnology). The strategy to arrange them in a hexagon represents an effort to overcome this usual isolation and lack of interconnectedness (i) as well as to emphasize the equality of each and every node (ii). In other words, these poles, or nodes, are artificial subsystems which try to paint ‘reality’ through their own intellectual categories and tools. One needs to bear in mind, however, that while science is rough, life is delicate and it is the practice of writing that rectifies this distance. (Barthes 1978) This is what the outer circle signifies – the wholeness, unity, or synthesis through a two-way rotation which implies the need to overcome the dogma of six artificial points of view. The strength of this framework in regard to the outer circle and its underlying hexagon is grounded in the need to hybridize and thus synthesize findings of otherwise six isolated subsystems into a single account; we constantly need to be reminded and aware of the fact that phenomena out there are not created through isolated intellectual subsystems, but are, in fact, coproduced. As far as the inner rhombus with nodes **T**(emporality)-**O**(ppression)-**D**(ominance)-**S**(patiality) is concerned, it is based on two sets of dyads ($T \times S$; $O \times D$) and its function is to explore simultaneously spatial and temporal effects of power/knowledge nexus. The oppression-dominance dichotomy can be spatially understood as the relationship between cen-

tre and periphery, and temporally as real and imagined lived space in between them. It is also the case with respect to the rhombus that the unity and synthesis is being sought – this effort is again inscribed through a two-way rotary mechanism of the inner circle.

Finally, the inclusion of both the hexagon and rhombus into a single framework reflects the necessity for the researcher of investigating ESPECT and TODS as parallel, complementary and interconnected systems since it is not only through the synthesis of nodes, but also through an examination of processes which coproduce these geometric arrangements, that we can get a better grip on physical, social, and imagined ‘reality’.

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Résumé

Zkoumání hybridit a koprodukcí: Epistemologie, (disciplinární) politika a krajiny

Předkládaný článek studuje hybridní systémy a procesy koprodukce a jejich význam pro disciplínu geografie. Zkoumání probíhá ve třech úrovních, konkrétně v úrovni filosofie vědy a sociologie vědění, dále pak v úrovni vědeckých disciplín a nakonec v úrovni teorie, jejích objektů a empirického výzkumu. Výše uvedené tři úrovně následně slouží jako referenční rámce pro každou z hlavních částí článku. První část ukazuje jak proces hybridizace rozdílných ontologií a epistemologií, jež jsou shrnuty do přiložené matice, mohou a také skutečně vybavují výzkumníka velmi odlišnými představami o tom, co existuje a jakými způsoby se toto můžeme dozvědět. Druhá část se zaměřuje na intersticiální prostory mezi existujícími akademickými disciplínami. Za dva analyzované příklady slouží disciplíny politické ekologie a environmentální bezpečnosti. Třetí část posléze objasňuje způsoby, s pomocí nichž disciplinární organizace vědění (fyzická geografie vs. humánní geografie) ovlivňuje naše vnímání toho, co utváří domněle neutrální předměty studia týkajících se procesu spatializace, tj. krajin a regionů. V závěrečné části je navrhnout analytický rámec pro studium hybridních systémů a procesů koprodukce.

