IRS Institut für
Regionalentwicklung
und Strukturplanung

Working Paper

for Rolf Lindner
and the Lindnerian Habitus

„If He comes my way,
I will try to make Him stay"*

Ulf Matthiesen

KnowledgeScapes

Pleading for a knowledge turn in socio-spatial research

*Songline from Billy Holliday („The Man I love", George and Ira Gershwin) – nowadays a widely approved strategy to „attract as well as keep, like fly tape" (Ann Markusen) innovative actors and investors in peripheral regions.

Leibniz-Institute for Regional Development and Structural Planning (IRS)
Flakenstraße 28-31, 15537 Erkner
http://www.irs-net.de

Erkner, September 2005

1. Introductory Remarks

The emergence of *post-traditional* knowledge societies has propelled human resources, continuous learning processes and knowledge itself into the role of **a** – if not **the** – core issue for sociocultural developments and economic growth in Europe. Consequently European policies try to support these dynamics through a wide range of implementational measures and instruments (Lisbon/Göteborg strategy and beyond). In the meantime though it has become clearer, that knowledge-based societal developments follow complex pathways with tricky causalities and unintended consequences. The utopian charm of knowledge-based societal formations is vanishing and harsh knowledge-based disparities become evident. The *factual* pathways of spatial developments seem to increasingly depend on a wide range of untraded but economically crucial interdependencies, which again are mostly knowledge-based. In sum new spatial constellations emerge, which are characterized by the unintended co-presence of growth with shrinkage processes and sometimes heavy employment losses. This makes *one-size-fits-all-solutions* for urban-regional developments (xyz-valleys etc.) increasingly obsolete. Instead the institutional and organizational *distinctiveness* of knowledge-based developmental arrangements becomes more and more important. This for sure increases the context dependencies of spatial development pathways – and of governance strategies and change management approaches. This increase in context dependency via knowledge-based social and spatial development dynamics finally receives enforced attention in recent spatial research. Nevertheless on the policy-side of the complex field of knowledge-based economic and sociospatial developments the danger of quick ex post-generalizations and placebo policy recommendations remains strong.[1]

It is against this background of crucial but not fully understood knowledge-based societal transformation processes and governance rearrangements that we propose to enforce a *knowledge turn in social-science-based spatial research* (see Matthiesen 2005a). The two fold goal here is to improve both the precision of empirical reconstructions of new coevolutionary pathways between socio-spatial and knowledge developments as well as the improvement of knowledge-based governance approaches.

[1] For a recent discussion of these interdependencies s. U. Matthiesen, 2004b, 2004c, 11ff.

Our head phrase *"KnowledgeScapes"* intends to indicate this turn. In order to make this turn successful, it seems imperative to refine concepts and sharpen analytical tools. The purpose here is to deal more adequately with specific forms and effects, by which the coevolution of space and knowledge on different levels of interactive couplings "takes place". This may even help to implement more successfully case-specific "knowledge based" governance arrangements, which can bridge the new gaps between knowledge-based growth-, shrinkage- and stagnation processes.

2. The Landscape of Knowledge Forms

a. Knowledge and Learning Concepts

During the last decade intense research and policy efforts have been under way to understand, explain and improve the effects of the knowledge base and of human resources on different societal systems (economy, politics, technology, urban-regional development etc.; for a recent interdisciplinary overview s. Matthiesen 2004a (Ed.)). From this vast literature, we propose to adopt *a pragmatist and social constructivist line of argument*[2] to introduce a knowledge concept, which will fit in with creativity-, innovation- and diversity-oriented approaches of social and spatial developments. The focus here is on "knowledge as practiced – within structures, processes and environments that make up specific epistemic settings".[3] Some comments on the core concepts of knowledge and learning seem indispensable here:

Knowledge: In contrast to data and information, knowledge is introduced here as indicating cognitive operations with a quite demanding selectivity. Its core function is to select, order and integrate an exponentially growing abundance of data and information within specific *types of relevancy*. Knowledge in this sense always has to do with processes of sense making and with the improvement of capacities to act (speech acts included). Knowledge then incorporates comparisons, the evaluation of action consequences as well as judgements and values. On the other hand, it encompasses the capacity of self-description, reflexivity and abductive reasoning about future acts and their possible outcomes.

---

[2] The different conceptual traditions integrated here will be specified in chpt. 2c.

[3] See Knorr Cetina, 2000, 8; later we will differentiate these epistemic settings according to knowledge forms, knowledge milieus and knowledge networks. See below Figures 1 and 2.

Learning: During recent years growing emphasis has been given to *learning* as **the** crucial '*process'*, by which the '*product'* of knowledge is improved further – or brought closer to the market. Learning here obviously refers a. to individual learning and the transformation of individual preferences ("Bildung") as well as b. to organisational and policy learning qua "collective" phenomena. Since the days of stimulus-response-approaches in learning theory growing attention has been given to the shift from single and double loop learning to 'deutero learning' and "learning to learn"-processes[4].

The European Union – from its Research Framework Programme FP 5 on and with even enforced priority in FP 6 and the now proceeding FP 7 (Advancing the European Research Area) – has consented to devote considerable resources to the research and policy fields of knowledge and (regional etc.) learning (12/1998). So these framework programmes rest on strong expectancies as to the prosperous dynamics of knowledge-based economic and societal developments (for a more extensive discussion and further references see again Matthiesen 2004a).

b. Conceptual Frameworks of Knowledge-based Development Schemes: Recent discussions on space and knowledge mostly adopted *dualistic* conceptual approaches – along the lines of Michael Polanyi (1958) in his famous endeavour to distinguish different forms of knowledge. The main conceptual divide here runs between tacit-implicit-personal *vs.* codified-explicit-institutional knowledge formations (for a recent typological synthesis approach see Ash Amin, P. Cohendet, 2004). The Nonaka school may be mentioned here as an important and even economically successful adherent to this highly generative and quite essentialistic dualism (Nonaka 1994, Nonaka et al. 2003). Via cross-tabulations, Nonaka et al. have tried to extend this dualistic scheme and generated four modes of knowledge "conversion" (socialisation, externalisation, internalisation and combination). Despite wide-spread implementations in management-related action und research fields these dualistic approaches nevertheless show considerable lacks of complexity. They frequently even fail to differentiate clearly

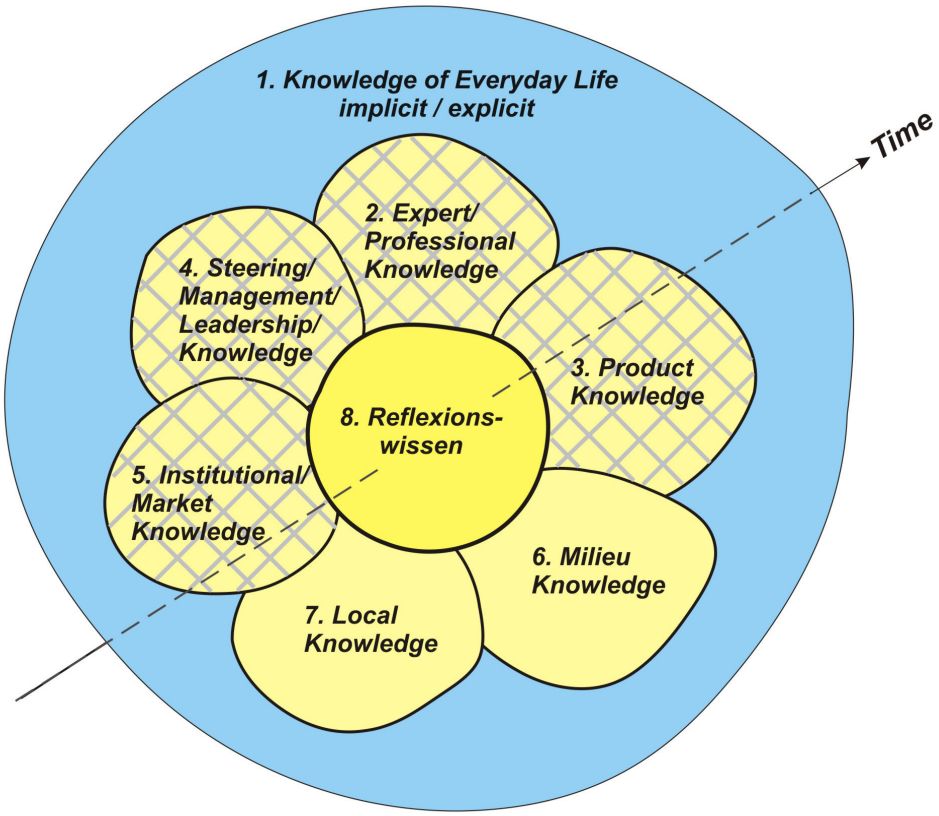
[4] Ar Agyris and Schoen have called it in their influential work (Argyris, Schoen 1978, 1996, c. Watzlawick 1992); as to "Systemic Learning and supraindividual learning processes" see Max Miller 2002 and Matthiesen/Reutter 2003.

enough between various *forms of knowledge* and different *interactional dynamics* as *embedding processes* (see Willke, 2002a). In order to reach an improved understanding of the complex coevolutionary forms of space *and* knowledge therefore additional analytical distinctions become indispensable. [5]

c. The IRS-Flower of Knowledge Forms

Within the context of these still ongoing conceptual debates our own stand is that the commonplace dual schemes of explicit/implicit, codified/uncodified and institutionalised/personalised knowledge types 'are helpful, but not sufficient' (Matthiesen 2004b). In order to reach a more adequate working concept of knowledge in technological, research, governance *and* everyday life contexts, we propose an extended and refined "knowledge landscape". This new approach tries to integrate different conceptual traditions, for example hermeneutic approaches (s. Habermas 1981, Matthiesen 1985, Matthiesen 1994, Hildenbrand 2004), structural-phenomenological variants of knowledge sociology (Alfred Schütz 1964, Hannsfried Keller (1973/1978), Thomas Luckmann 2002), constructivist (e.g. Knorr Cetina 2000) and reconstructionist (Oevermann 1996) approaches to knowledge the concept of socially robust knowledge (Helga Nowottny et al. 2001), organizational knowledge creation studies (Wilke 2002a/b), learning regions approaches (Morgan 1997; Cooke1997, Matthiesen/Reutter 2003) and 'sticky knowledge place' research (Markusen 1996, Malecki 2000). Integrating these conceptual approaches on the base line of a milieu-approach to sociospatial developments, we propose to distinguish between the following eight interrelated and partly overlapping fields and forms of knowledge:

[5] In order to show the fruitfulness of these distinctions, we will show in Part 4, how the differentiation between knowledge forms and interactional dynamics may ease the actor-oriented analysis of *knowledge conflicts* in socio-economics, socio-technological and cultural contexts.



Source: UM/IRS 2005
adapted from Matthiesen/Bürkner 2004

Figure 1: Landscape of Knowledge Forms ("The IRS-Flower of Knowledge Forms")

Only short comments on the specifics of these different types of knowledge forms can be given here[6]:

1. Knowledge of Everyday Life and common-sense relevance structures enable us to act within life world environments and everyday praxis networks. This crucial knowledge stratum surprisingly often is neglected or underrated within recent knowledge 'theories' and knowledge management approaches. It is in emerging *new* knowledge typification processes (Grathoff 1989) and in *knowledge conflict situations* (see chpt. 4) that its crucial impact becomes all the more apparent. In addition to this knowledge of everyday life enables systematic flows between the other knowledge forms and functions as the base line for abductive reasoning (s. Jo Reichertz 2003). So in this respect it represents the *essential deep structure* for more specialized or expertise-oriented knowledge forms. Age, gender and ethnicity are important factors, which

[6] For a more extended discussion see Matthiesen/Bürkner 2004c.

shape individual and social contours of everyday life knowledge. Its political importance in debates on participatory governance forms etc. is obvious.

On the other hand: Mediated through their experience-based pragmatic motives (cp. Schütz 1964, Luckmann 2002) *actual* types of everyday knowledge get increasingly hybridised and permeated by trivialized and/or generalized forms of professional expert knowledge. Through popularised parts of professional epistemic cultures life world knowledge (see Habermas 1981, Matthiesen 1985) and everyday knowledge therefore undergo deep reaching transformations.

2. Expert and professional knowledge encompasses scientific and codified knowledge expertise reaching from *low* via *mid* to *high* technology fields (s. Schütz 1964, Sprondel 1979). In posttraditional knowledge societies this type of knowledge mostly derives from scientific-technological backgrounds. It often is targeted at the competitive refinement of professional practices and the generation of new expert knowledge (professional innovation). On the other hand, the growing economic and political importance of expertise by professionals, administrators, planners and lawyers not seldom gets encapsulated into access-restricting *exclusive* knowledge cultures encompassing soft knowledge milieus and hard strategic knowledge networks. These *exclusive* KnowledgeScapes (see below Figure 2 and Chpt. 3, I) are in constant danger of becoming *too* homogenous and *too* hermetic, therefore diminishing/diminish creativity and innovation. Improved expertise forms try to lower *some* barriers – systematically overlapping knowledge from different actors, disciplines, professions and knowledge cultures. This is the case in project-bounded *mode 2-networks* (s. Gibbons et al. 1994, Grabher 2004, Grabher/Powell (2004)) or within large planning projects including financial implementations of complex infrastructure planning processes.

3. Product knowledge contains technological knowledge in a more narrow sense, including the specifics of product-oriented low-mid-high tech knowledge forms. Especially in the case of high tech knowledge it shows rapid innovation cycles. For sure there remain more traditional experience-based forms of product knowledge, some-

times in conflict, sometimes in creative complementarity with mid and high tech forms and their accelerating change rate of innovation.

4. Steering Knowledge (including management and leadership knowledge). This knowledge form reaches from a. steering competencies in *informal* (though targeted) cooperation types via b. empowering strategies of the governance mode to c. formal-bureaucratic design principles of the top down control type. It includes steering knowledge regarding contracts (employment etc.) and includes the knowledge of how to successfully construct career models (own/else). In posttraditional knowledge societies it increasingly is confronted (and therefore actively has to deal) with the steering problem of spatially crucial *brain gain/brain drain* processes.

5. Institutional Knowledge is knowledge about the systemic and functional as well as formal and informal logics of organisations and institutional arrangements. Institutional knowledge is distributed highly unequal between different actor networks and societal strata. Whereas up to date-professional milieus often possess considerable amounts of actualised institutional knowledge as well as the resource-based capacity to use and renew it, culturally marginalised milieus in particular are usually dependent on outdated institutional knowledge, trying to adjust these shortcomings via 'soft' personal knowledge networks and informal institutions.

6. Milieu-Knowledge circumscribes the social processes of cognising "how things normally are going" within different social networks and milieus, within hard and soft networks and KnowledgeScapes (s. Figure 2), within institutions and organisations. Generated mostly by practical experience within typified behavioural settings (s. Schütz 1964, Luckmann 2002), interactional contexts accompanying this knowledge form can range from 'locked in' milieus and their hermetic knowledge types to innovative, creative variants of milieu knowledge – allowing a more reflexive and/or creative look on conflicts, interests and power relations. A continuous flow of interrelations with relevancy structures of *"Knowledge of Everyday Life"* (see above knowledge Form 1) is crucial here.

7. Local Knowledge addresses locally situated forms of knowledge-based competencies, integrating more or less systematically fragments of different knowledge forms on the local level (e.g. 1. Knowledge of Everyday Life, 6. Milieu Knowledge and 3. Product Knowledge). This knowledge form operates in close contact to everyday and professional experiences. In good practice-contexts it can function as a source for strengthening local self-organising capacities and social forms of creativity, in other contexts it may foster lock-in and exclusion processes, strengthening non-innovativeness.

8. Reflexive Knowledge functions as a kind of meta-knowledge, operating from the knowledge base of everyday life through all the other six knowledge forms. In addition to this it unfolds the possibility of a critical appraisal of the world and the self (G.H. Mead 1934). In this way reflexive knowledge generates structured interdependencies between the other seven forms of knowledge. It "evaluates" *adequate* translation and coupling rules between them and may empower creative conflict resolution approaches. By its very nature, reflexive knowledge transcends and in a way irritates institutional and organizational boundaries (governmental functions, occupational routines, management truisms). Reflexive knowledge and its critical, empowering, sometimes inclusive, sometimes more "radical" or "subversive" potentials can be of great importance in innovation processes and conflict resolutions, e.g. in public/private goods conflicts (s. below Ch. 4). Favourable context conditions presupposed, reflexive knowledge may ease the activation of participation potentials and creative collaboration forms. Context dependency of reflexivity standards is only one of the crucial questions here.

3. Levels of knowledge-based cooperation

In order to apply the *knowledge turn of spatial analysis* to concrete fields of spatial dynamics it is indispensable to specify relevant forms and levels of interactional dynamics.[7] In addition to our system of knowledge forms (see "The IRS-Flower of

[7] For the complementary differentiation of eight dimensions of spatial development, see Matthiesen 2003, 251 ff. (1. Global Lifeworld-Spaceship Earth; 2. Body Spaces, 3. Symbolic Spaces, 4. Societal Spaces/Spaces of

Knowledge Forms" in Figure 1) we propose to distinguish at least the following *three levels of interaction in spatially relevant analysis and governance approaches* (the zig-zag-arrows in Figure 2 indicate some of the possible conflict lines)*:*

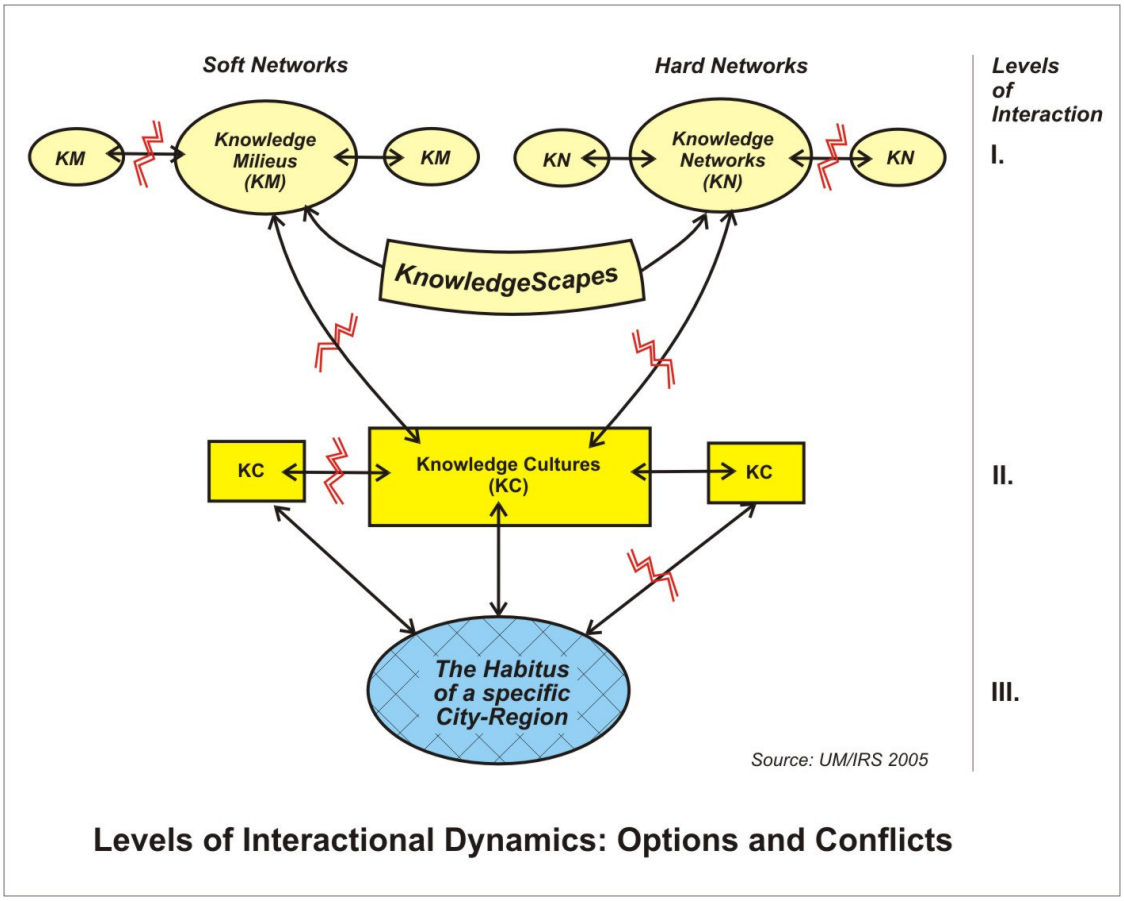


Figure 2: Levels of Interactional Dynamics: Options and Conflicts

I.a Soft Networks, e.g. Knowledge Milieus (KM): We propose to have a specifically intense regard on "soft" interaction networks. Completely neglected or strongly underestimated in common space- and planning – relevant knowledge approaches KM show considerable capacities of self organization by way intensified internal communication processes and shared tacit/explicit components of knowledge (see Habermas 1981, Matthiesen 1985). Knowledge milieus may have extremely different effects though: They can be important interactive layers for innovative breakthroughs; on the other hand they may result in various degrees of "strong tie–weaknesses" resulting in non-innovative seclusions and redundant action routines. Generally speaking though

Milieus, 5. Landscapes/Cultural Landscapes, 6. Built Environment, 7. Space of Things, Matters, Objects/Spaces of Nature2, 8. Spaces of Governance).

KM are important interactional preconditions for creative processes. At the same time KM seem to be "only partly finalizable". Therefore, they "oppose" more rigid steering and governance expectations. This may be one main reason, why they frequently are underestimated or completely neglected in traditional policy-oriented knowledge based development approaches (see Matthiesen/Bürkner 2004; Matthiesen 2005c).

I.b (Strategic) Hard Networks, e.g. Knowledge Networks (KN). This concept addresses strategic cooperation structures within formal-institutional structures and systemic functions, with clearly defined strategic goals, explicit benchmarking processes (milestones) and increasingly with a defined end (death of the network). *Hard* strategic KN show a considerable span of variants, reaching from enduring bureaucratic R & D organizations and science institutions to flexible project-bound temporary cooperation networks. For sure project-bound temporary networks get increasing analytical and political attention. (s. M. Faßler 2001, G. Grabher 2002/2004; Grabher/Powell 2004).

I.c KnowledgeScapes (KS): The crucial point here is: There are many forms of case-specific hybrid mixes between the two interaction types KM and KN. These hybrids seem to be of utmost importance for the well – or malfunctioning of knowledge based development dynamics. *KnowledgeScapes* show a great variance in their structural composition. Neither the possible nor the factual types nor the dynamic processes within these different types so far are too well understood. This makes KnowledgeScapes an important research line to empirically reconstruct relevant types of the co-evolution of space and knowledge.

II. Knowledge Cultures (KC): Within knowledge-societal city regions, heterogeneous multitudes of knowledge cultures are constituted via the interplay of case-specific interactional networks, distinct arrangements of knowledge forms and hybrid *KnowledgeScapes*. These case-specific knowledge cultures show extreme differences in their ways of coupling knowledge, action schemes and context conditions with chains of value production ("problems of fit!"). KC always encompasses typified

combinations of different knowledge forms and integrates them systematically with the respective interaction levels of milieus/networks/scapes into learning and competing creativity and innovation cultures.

III. Cities and regions show marked differences in their ways of how they factually manage the integration of relevant knowledge into action - on the systemic level of economy and politics as well as in city-cultural and social contexts. In order to address these marked differences - we propose to introduce the holistic integration level **"Habitus of a City Region".**[8] With the help of this concept we want to focus analysis and city politics on a specific knowledge-based, though *heterogeneous* "Gestalt", which in a first round influences our everyday distinctions between different cases of a "city as a whole" ("Paris-o la la"). In order to reconstruct these everyday knowledge-based holistic concepts and to refine them professionally-methodologically, we have to make systematic comparisons (minimal/maximal contrasts) and to feed in additional knowledge and information. It is on this stage, that the different levels of interaction (see above levels 1.-3.) and the specific knowledge forms (s. above knowledge forms 1.-8.) hypothetically are integrated into a certain *Gestalt* by which we can identify a certain city and "tell the differences" (e.g. between Bern and Berlin, London and Paris, Kopenhagen, Turin, Jena, Erlangen, Flensburg, Potsdam, Frankfurt/Oder). This for sure includes image-, branding- and media-components and case-specific gaps within the chains of value creation (c. Matthiesen et al. 2004d: "Berlin-City of Knowledge").

This settles our short sketch of the proposed *knowledge turn in spatial research* and some of its conceptual rearrangements. The implied research design was developed and tested within the comparative Lead project 3 of the Institute for Regional Development and Structural Planning: "Knowledge-based City Developments – Comparative Case Studies on the Dynamics and Governance Options of Actual Tendencies in City Development"). Empirical reconstruction, conceptual refinements and research heuristics here went hand in hand. The dominant research experience here was that

[8] We borrow the concept "Habitus of the City" from Rolf Lindner (2004), giving it a knowledge turn and operationalizing it a bit further through the introduction of our three analytical levels. For sure we are well aware of the dangers of suprasubject – categories ("Großsubjekt"-Begriffe) (see Matthiesen/Reutter 2003, Matthiesen 2005d).

social-science-oriented spatial analysis in this way gets better prepared to reconstruct the fuzzy, hybrid structure/structuration processes of knowledge-based spatial developments in post-traditional knowledge societies and in their city regions.

This research- and project-based experience developed in three stages: Applying minimally and maximally contrasting case study techniques the IRS- project:

- In a first round focussed successful and unsuccessful, East-German and West-German types of knowledge-based city developments (Jena, Frankfurt/Oder, Erlangen).
- In a next step special attention was given to forms of interplay between *soft* networks (knowledge milieus) and *hard* networks (strategic networks & formal institutions of (higher) education and R & D) within knowledge based spatial development. After intense studies of three small 'big cities' we focussed our research on the Metropolitan Area of Berlin and some of its knowledge-based hot spots (Buch, Potsdam, Adlershof).
- In a third and final step, the project team now is preparing a well measured "internationalization" within the next round of contrastive case studies (see Figure 3).[9]

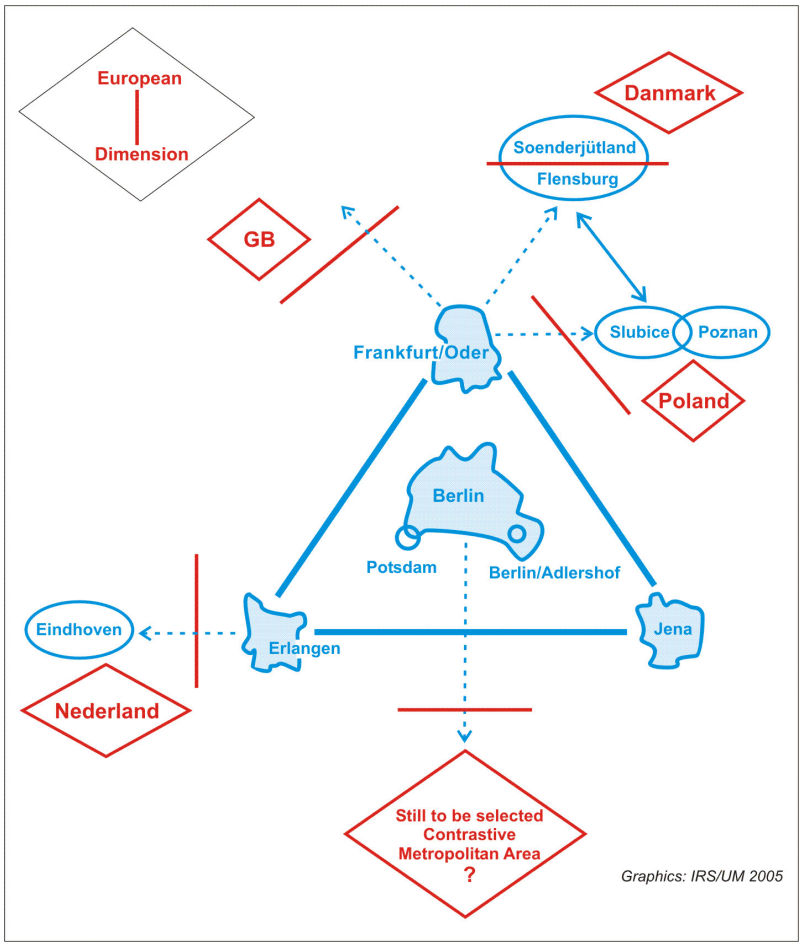


Figure 3: **Phase 3 of the IRS-Lead Project 3 (2006/2007) with carefully measured international case contrasts**

[9] First results in English can be found in: Matthiesen (2005a) on governance Milieus in Matthiesen (2005b) on the Human Resource Base within city regional developments and in Knorr-Siedow/Tosics (2005).

4. Knowledge Conflicts – Analysis and Resolutions

Along the lines of a plausibility test, we propose to apply the above-developed interplay of knowledge and interaction forms on the hectic fields of knowledge-based innovation- *and* conflict-research. Staying short, we have to concentrate on two points:

1. For many knowledge-based innovation and conflict lines it makes sense to bundle the following four knowledge forms into two groups: 2. Expert and professional knowledge, 3. Product knowledge, 4. Steering knowledge and 5. Institutional knowledge (see the hatched "potatoes" in Figure 1.). A second bundle entails complementary knowledge forms: 1. Everyday knowledge, 6. Milieu knowledge and 7. Local knowledge, all of them crucial for generating the seedbeds and *context structures* for creativity, innovation and conflict resolution within the relevant fields of action. In addition to this, every approach to creativity, innovation and conflict resolution has to *systematically* integrate knowledge form 8. (*Reflexive Knowledge)*. As our empirical case reconstructions showed, this seems to be a precondition in order to generate fresh solutions here – incorporating ('weak' or 'strong') reflexivity structures into the other seven knowledge forms and their respective interactional dynamics.
2. Comparing the KnowledgeScapes-Heuristics with other state of the art-approaches in knowledge- and conflict-research a (cf. Bonacker 2005, Maresch et al., 2002) a considerable improvement seems to be obvious. By way of illustration, quite differentiated *"possible*" knowledge-based conflict lines can be outlined in advance. This may facilitate empirical case reconstructions and governance proposals considerably. For example we can distinguish now between:
    i. knowledge conflicts (in the following: **kc**) *between* different knowledge forms (s. the traditional conflict lines between engineers, social scientists and environmentalists)
    ii. kc *within* one of the respective knowledge forms; innovation, creativity, tradition, routines, regression all seem to circle around this conflict line. In addition to this, it sharpens the focus on how heterogeneous forms of knowledge are integrated into different, sometimes contradictory *KnowledgeScapes* and *Knowledge Cultures* – see Figure 2.)

iii. kc stemming from differences in the pace of *re-invention* and *devaluation* of knowledge forms – resulting in non-knowledge (old/brand new, traditions in posttraditional society; see for example the different reinvention strategies of "the European City" etc.)

iv. kc lines between different kinds of *knowledge institutions* (circulating around one or more knowledge form): F & E, Universities, extra-university research institutions etc.

v. kc about right approaches to develop successful codification strategies of *tacit/implicit knowledge components* (value conflicts: security vs. innovation & creativity)

vi. kc focussing on *access to* or *exclusion from* certain knowledge forms and their content

vii. kc generated by brain drain vs. brain gain processes (nowadays a crucial benchmark for successful knowledge *management* strategies)

viii. kc between (high/mid/low) technological developments and technology in use (knowledge as practiced)

ix. kc generated by different *interaction dynamics* within hybrid *KnowledgeScapes* (soft networks *vs.* hard networks; knowledge milieus *vs.* strategic knowledge networks); cp. Figure 2.

Another crucial point here is to sharp conceptually the research focus on the empirical fact that knowledge form conflicts function not only as burdens for interaction routines. On the contrary: kc not seldom function as may incubators and seedbeds for innovation and paradigmatic breakthroughs – under certain interactional context conditions for sure (s. Figure 2). Especially in shrinking city regions – like in East Germany – *qualitative* measures of innovativeness integrating the creativity-steering effects of *knowledge conflicts* within hybrid *KnowledgeScapes* seem to become all the more decisive.[10]

[10] A similar argumentation can be developed regarding the ongoing debate over the public/private goods characteristics of knowledge. It is our thesis here, that adequate analysis as well as good implementational gov-

5. Summing up

Against the slippery background of exuberant expectancies and not fully understood "causalities" within the coevolution of knowledge and spatial development, a new approach focussing especially on hybrid "KnowledgeScapes" is presented here. This differentiated knowledge turn in social scientist spatial research results from a Five-Year-Research-Project at the Institute for Regional Development and Structural Planning (IRS). A first goal here was to compare successful and unsuccessful knowledge-based city regional development pathways in East- and West-Germany (Jena, Erlangen, Frankfurt (Oder), Berlin). This lead project now is under way to compare these German findings with *KnowledgeScapes* on the European level. Resulting from detailed case reconstructions two conceptual innovations are proposed here:

1. An elaborated schema of eight knowledge forms offering considerable research and governance advantages against the usual dualistic concepts in the line of M. Polanyi (tacit/explicit) etc.
2. The specification of three different levels of interactional dynamics within knowledge-based spatial development processes:
    1. Soft Networks ("Knowledge Milieus")/Hard Networks (strategic, finalized) *KnowledgeScapes* (case-specific mixes of soft and hard networks)
    2. Knowledge Cultures
    3. The Habitus of a specific City-Region.

It is argued, that the heuristic combination of elaborated knowledge forms with specified levels of interactional dynamics offers considerable advantages for analysis and governance approaches within the context of the coevolution of space and knowledge in so-called *KnowledgeScapes*. Since it is clear by now, that knowledge-based societal developments *systematically* produce new kinds of knowledge-based disparities, the "creative" integration of Knowledge Milieu-, Knowledge Network- and KnowledgeScape - studies becomes an important feature within the new governance challenges of European city regions at the beginning of the 21. Century.

---

ernance measures presuppose the conceptual differentiation between different knowledge forms (s. Figure 1) and different interactional layers (s. Figure 2).

Bibliography

Amin, A.; Cohendet, P. (2004): Architectures of Knowledge, Oxford: Oxford University Press

Argyris, C.; Schoen, D. A. (1978): Organizational Learning: A theory of action perspective, Reading, MA: Addison-Wesley

Argyris, C.; Schoen, D. A. (1996): Organizational Learning II: Theory, Methods and Practice, Reading, MA. Addison-Wesley

Berger, P.L.; Luckmann, Th. (1966): The Social Construction of Reality, Garden City N.Y.

Bonacker, Th. (ed.) (2005): Sozialwissenschaftliche Konflikttheorien, Wiesbaden: VS Verlag (3. print)

Cooke, Ph. (1997): Regions in a Global Market, Review of International Political Economy (1997), 4, 349-381

Faßler, M. (2001): Netzwerke, München: Fink

Gibbons, M., Limoges, C., Nowotny, H. et al. (1994) : The New Production of Knowledge. The Dynamics of Science and Research in Contemporary Societies. London, Thousand Oaks, New Delhi

Grabher, G. (2002): Cool Projects, Boring Institutions: Temporary Collaboration in Social Context, in G. Grabher (Ed.) Production in Projects: Economic Geographies of Temporary Collaboration. Regional Studies Special Issue 36 (3): 2005-15

Grabher, G. (2004): Die Nachbarschaft, die Stadt und der Club: Wissensmilieus in Projektökologien. In: Matthiesen, Ulf (Hrsg.): Stadtregion und Wissen. VS Verlag für Sozialwissenschaften, Wiesbaden

Grabher, G.; Powell, W. W. (2004): Networks (Critical Studies in Economic Institutions). Cheltenham: Edward Elgar

Grathoff, R. (1989): Milieu und Lebenswelt. Einführung in die phänomenologische Soziologie und die phänomenologische Forschung. Frankfurt/M.: Suhrkamp

Habermas, J. (1981): Theorie des kommunikativen Handelns. 2 Bände Frankfurt/M.: Suhrkamp

Hildenbrand, B. (2004): Gemeinsames Ziel, verschiedene Wege: Grounded Theory und Objektive Hermeneutik im Vergleich. In: sozialersinn, Heft 2/2004, S. 177-194

Kellner, H. (1973/1978): On the Cognitive Significance of the System of Language in Communication, in: Th. Luckmann (Ed.) (1978), Phenomology and Sociology, Harmondsworth: Penguin, 324-342

Knorr Cetina, K. (2000): Epistemic Cultures – How the Sciences Make Knowledge, Cambridge: Harvard University Press 2. Ed. 2000

Knorr-Siedow, Th.; Tosics, I. (2005): Knowledge management and enhanced policy application. In: Ronald van Kempen; Karien Dekker; Stephen Hall and Iván Tosics (ed.), Restructuring large-scale housing estates in Europe, Bristol: Policy Press

Lindner, R. (2003): Der Habitus der Stadt - ein kulturgeographischer Versuch. In: Petermanns Geographische Mitteilungen, 147 (2), S. 46-53.

Luckmann, T. (2002): Wissen und Gesellschaft, Konstanz: UVK

Malecki, E. J. (2000): Creating and Sustaining Competitiveness: Local Knowledge and Economic Geography. In: Bryson, J. R. et al.: Knowledge, Space, Economy. London, New York, 103-119.

Maresch, R.; Werber, N. (Ed.) (2002): Raum, Wissen, Macht, Frankfurt/Main: Suhrkamp 2002

Markusen, A. (1996): Sticky Places in Slippery Slopes. In: Economic Geography 72 (3), 293-313.

Matthiesen, U. (2. edition 1985): Das Dickicht der Lebenswelt und die Theorie des kommunikativen Handelns. München: Wilhelm Fink

Matthiesen, U. (1994): Standbein-Spielbein: Deutungsmusteranalysen im Spannungsfeld von Objektiver Hermeneutik und Sozialphänomenologie. (1994) In: Garz, Detlef ; Kraimer, Klaus (Ed.): Die Welt als Text. Theorie, Kritik und Praxis der objektiven Hermeneutik. Frankfurt/M.: Suhrkamp, S. 73-113

Matthiesen, U. (2003): Dimensionen der Raumentwicklung in der Perspektive einer strukturalen Hermeneutik, in: Krämer-Badoni, Th.; Kuhm, K. (Ed.) Die Gesellschaft und ihr Raum, Opladen: Leske + Budrich, 251-274

Matthiesen, U.; Reutter, G. (Ed.) (2003): Lernende Region – Mythos oder lebendige Praxis? Gütersloh: Bertelsmann

Matthiesen, U. (Ed.) (2004a): Stadtregion und Wissen, Analysen und Plädoyers für eine wissensbasierte Stadtentwicklung. Wiesbaden: Verlag für Sozialwissenschaften

Matthiesen, U. (2004b): Wissen in Stadtregionen, Forschungsresultate und Streitfragen, Orientierungswissen und Handlungsoptionen. In: Matthiesen, U. (Ed.) Stadtregion und Wissen. Wiesbaden: VS Verlag für Sozialwissenschaften

Matthiesen, U.; Bürkner, H.-J. (2004c): Wissensmilieus – Zur sozialen Konstruktion und analytischen Rekonstruktion eines neuen Sozialraum-Typus. (2004) In: Matthiesen, U. (Ed.): Stadtregion und Wissen. VS Verlag für Sozialwissenschaften, Wiesbaden, S. 65-89

Matthiesen, U. et al. (2004d): Wissensstadt Berlin – Zwischen Spardiktat und Exzellenzansprüchen. In: Netzwerk Stadt und Landschaft ETH Zürich (Ed.): Berlin – 15 Jahre ohne Mauer, DISP 156, S. 75-87

Matthiesen, U. (2005a): Governance Milieus in Shrinking Postsocialist City Regions - and their respective Forms of Creativity. DISP 162 ETH Zürich

Matthiesen, U. (2005b): Strengthening the Human Resource Base in East German Regions: Conceptual propositions, empirical evidences, governance paradoxes. In: S. Lentz (Ed.): Unification and Transformation, Vol. I German Annual of Spatial Research, Heidelberg: Springer (fortcoming)

Matthiesen, U. (2005c): Wissensmilieus – zwischen place, space und Medien, in: Faßler, M.; Terkowsky, C. (Ed.) Urban Fictions – Die Zukünfte des Städtischen. Medien, Leben, Wohnen, Wissen, Arbeiten, Spielen am Beginn des 21. Jahrhunderts (forthcoming)

Matthiesen, U. (2005): Städtische Identitäten heute – Prozesse und Konzepte. In: Philipp Oswalt (Ed.) Shrinking Cities Vol. II, Berlin (fortcoming)

Mead, G. H. (1934): Mind, Self and Society, Chicago: The University of Chicago Press

Miller, M. (2002): Systemic Learning. In: Sozialer Sinn, 3/2002, p. 379-421

Morgan, K. (1997): The Learning Region. Institutions, Innovation und Regional Renewal. Regional Studies 31, 491-503.

Nonaka, I. (1994): A Dynamic Theory of Organizational Knowledge Creation, in: Organizational Science, 5:1, 14-37.

Nonaka, I.; von Krogh, G.; Ichijo, K. (2003): Enabling Knowledge Creation, Oxford University Press.

Nowotny, H. et al. (2001): Rethinking Science, Cambridge

Schütz, A. (1964): The Well-Informed Citizen. An Essay in the Social Distribution of Knowledge. Collected Papers Vol. II, Studies in Social Theory. Den Haag: Nijhoff, p. 121-134

Sprondel, W. M. (1979): Experte und Laie: Zur Entwicklung von Typenbegriffen in der Wissenssoziologie. In: Sprondel, W.M.; Grathoff, R. (Eds.) Alfred Schütz und die Idee des Alltags in den Sozialwissenschaften. Stuttgart: Ferdinand Enke Verlag, S. 140-154

Oevermann, U. (2004): Manifest der objektiv hermeneutischen Sozialforschung. In: I. Fikfak, F. Adam & D. Garz (Eds.): Qualitative Research - Different Perspectives - Emerging Trends, Lubljana: 2004: 101-133

Polanyi, M. (1958): Personal Knowledge, London: Routledge & Kegan Paul

Reichertz, J. (2003): Die Abduktion in der qualitativen Sozialforschung, Opladen: Leske + Budrich

Watzlawick, P. (1992): Lösungen: Zur Theorie und Praxis menschlichen Wandels. Bern: Hubert, 5. Auflage

Willke, H. (1995): Systemtheorie III: Steuerungstheorie, Stuttgart: Lucius & Lucius, UTB

Willke, H. (2001): Systemisches Wissensmanagement. (Mit Fallstudien von D. Gneweko u.a.) Stuttgart: UTB (second enlarged edition)

Willke, H. (2002b): Dystopia, Studien zur Krisis der modernen Gesellschaft, Frankfurt: Suhrkamp