

Editorial: Contributions to Physical Geography – Approaches and Topicality from the Perspective of Geography-Related Policy

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1. The Issue: “Geography today”

Physical Geography as a unifying discipline is scarcely recognisable nowadays. Not only has it split up into numerous subdisciplines, but research is also pursued within it in an extremely specialised way. This trend is characteristic not only for geography in the German-speaking countries. There is a distinct discrepancy between the normative statements uttered in the international scientific community on the one hand and research practice on the other.

Where interdisciplinary approaches are practised (e.g. in all the contributions in *Ehlers and Krafft* 2001), an attempt is made to propagate some kind of holistic perspective. The volume just mentioned shows that completely different disciplines work on problems which can only be handled in a transdisciplinary way. Geography in Germany moves in a similar direction (*Ehlers and Leser* 2002), as teams of authors from both human and physical geography work on the same problems in an interdisciplinary way. This “gap” between Physical and Human Geography has become the object of theoretical and methodological discussions (e.g. *Weichhart or Leser in Heinritz* 2003).

The general necessity to pursue geographical research on man-environment systems is undisputed. But opinions differ substantially about how this is to be done. Without wishing to repeat the discussions of the “Munich Symposium on the Future of Geography” (*Heinritz* 2003), we should remember a number of disputed aspects. These include

- the functional approach in Geography and spatial reality (e.g. *Borsdorf* 1999, *Leser* and *Schneider-Sliwa* 1999, *Pohl* 1993),
- dimensions of the “objects” in question (see also the “theory of geographical dimensions”, *Neef* 1963, 1967), and
- the integration of – and into – neighbouring disciplines (e.g. *Ehlers* 1998, 2002, 2001; *Leser* 2002).

2. The Contributions to Physical Geography in this Issue of DIE ERDE

The ideas put forward above form the matrix into which the articles of this issue of DIE ERDE are integrated. In the best sense of geographical research we are dealing here mostly with contributions on a macro-spatial level which are oriented towards eco-functional contexts, including man to a greater or lesser extent or attempting to unite different (subdisciplinary) perspectives.

In his article *J.-F. Venzke* fuses biogeographical and geomorphological approaches, integrating a broad range of regional literature. In an almost classical way in geographical studies, the zonation of the environment is linked with processes of the more recent – or most recent – history of the earth (Pleistocene and Holocene). Geological-tectonic processes are considered as well as prehistoric and recent geomorphic processes. The methodological foundation is successfully based on the

spatio-functional approach, which also represents a bridge between the fields of geology and geography, as demonstrated by the literature quoted by *Venzke*. A further theoretical advancement in the direction of *M. Claussen's* contribution (to *Ehlers and Krafft* 2001: 147ff.) on "Earth System Models" would easily be possible. Seen from this perspective, *Venzke* fits perfectly into the current discussion in the various disciplines of the earth sciences about the evolution of landforms and climate during the Pleistocene and Holocene as well as – of course – the Anthropocene.

P. Vollmert, A.H. Fink and *H. Besler's* article transcends disciplinary boundaries in a similar way. Problems of climatology and oceanography form the context: a space-time pattern of the dry zones of western Africa. The authors point to the monocausal explanations of the existing approaches which cannot sufficiently explain the rainfall anomalies of the Ghana and Benin Dry Zones. As often happens in the characterisation of zonal terrestrial weather and climate, it proves imperative to incorporate the marine environment, including surface temperatures of the sea, ocean currents and tropical wind systems. Here, approach and methodology perfectly match with the position presented by *H. Grassl* (also in *Ehlers and Krafft* 2001: 139ff.) who identifies problems of research of global climate variabilities.

A.M. Igué, T. Gaiser and *K. Stahr's* contribution also has a transdisciplinary approach. It focuses on aspects of the soil, which is regarded as a major substance of the landscape both in pedology and in landscape ecology as well as in various fields of geography. The authors build a link between the pattern of physical geographical spatial units on the one hand and land-use on the other. Geographical theory is taken into account by the spatio-functional approach and the man-environment context. It is, therefore, not surprising that the evaluation of the land-use potential is oriented towards geomorphic-geoecological spatial units. The authors realize at the same time, however, that the evaluation methods have their weaknesses, which means that we have to be somewhat cautious about how the results are implemented in land-use planning. In the end, this expresses a

fundamental problem of all geoscience work in spatial reality: Geoscientific phenomena are *continua* and their evaluation and delimitation is largely a question of scale. Similar to *Vollmert* et al. the authors are dealing here with aspects of food security (cf. DIE ERDE 2002, issue 4: "The Geography of Vulnerable Food Systems", with the editorial by *H.-G. Bohle*) of the respective zones which not only depend heavily on rainfall but also on soil. Both contributions are part of the questions for which *T.E. Downing* et al. (in *Ehlers and Krafft* 2001: 255ff.) indicate major perspectives.

With the contribution by *A.M. Ernst, W. Mauser* and *S. Kempe* (ibid.: 265ff.) the last-mentioned volume once again presents a similar theme to that of *A. Keil, A. Kleinhans, S. Schwarze, R. Birner, G. Gerold* and *S. Lipu* with reference to Indonesia's Central Sulawesi. Once more, water is in focus; availability and use are the problems. And there are close connections to the water-climate cycle of the tropical rain forest. The case study operates at the micro-spatial level, applying the man-environment approach of geography and landscape ecology. In the other contributions to this issue of DIE ERDE, with their zonal macro-spatial view, man merely forms the background (for instance, in his dependence on natural resources or represented by land-use); *Keil* et al. take a different approach: in studies on the choric to topic level, we are actually confronted with man as an agent, either as an individual farmer or a social group. Here, man is involved directly, in this case by a participatory approach, which describes human needs on the one hand, but also draws attention to the effects of man on the water balance of the landscape. This again links this issue of DIE ERDE to "Understanding the Earth System" (*Ehlers and Krafft* 2001), where several contributions, and especially the introductory chapter by the two editors (p. 4ff.) point exactly to the close man-environment context and its geographical-integrative analysis.

The last article in this issue, by *M. Dotterweich, J. Haberstroh, A. Siedmüller, A. Schmitt* and *H.-R. Bork*, seems to differ fundamentally from the contributions presented above. This certainly applies to its regional setting, but not to its methodology:

This article, too, is based on the theory of geographical dimensions as well as the theory of geographical complexes (*Borsdorf 1999; Leser and Schneider-Sliwa 1999; Neef 1963, 1967*). Here again, the authors work in an integrative way, including the most recent stage of geological evolution where man interferes with incipient land-use in late post-glacial times. The approach is set in the exact natural sciences – but incorporates humankind. This is made possible by working on a micro-spatial level in the topical dimension, as in *A. Keil et al.*'s contribution presented immediately above. In contrast to other special studies, the approach, once again, is transdisciplinary, i.e. relief evolution, climate history, land-use changes and interference in the landscape balance by early land-use are considered in combination. The results can easily be transferred to other “old” settlement areas of central Europe.

3. Conclusion

Taken together, the contributions to this issue of DIE ERDE show that physical geography in the German-speaking countries is in a process of change: away from the investigation of localised and specialised problems towards studies of supraregional and transdisciplinary contexts. It is not by chance that the volume “Understanding the Earth System – Compartments, Processes and Interactions” (*Ehlers and Krafft 2001*) has frequently been referred to as a standard text here, as it represents the state-of-the-art of transdisciplinary perspectives on the man-environment-space complex. It becomes apparent, however, that transdisciplinary approaches are increasingly being employed not only in geography, but also in the other disciplines of man-environment-space. The problems arising from this for policy-related issues in geography have been discussed by various authors on several occasions (among them *Heinritz 2003*, but also *Borsdorf 1999* or *Leser 2002, 2004*).

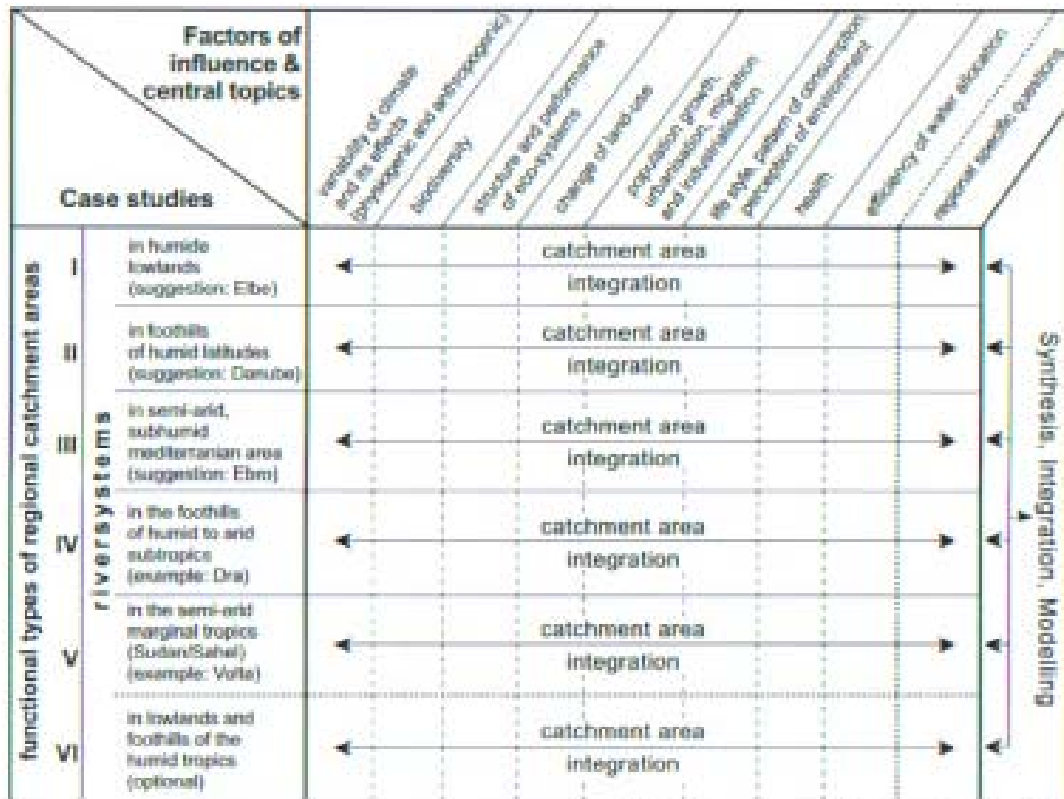
The consequences resulting from the essentially methodological discussions being held in geography at present cannot simply be “Carry on as before”. Rather, we should strive to develop conceptual-theoretical, methodological and technical

instruments. This may have the effect of re-combining human and physical geography, but also of reviving contacts to neighbouring disciplines in natural and social sciences. It is not simply a question of dialogue with the specialists in the neighbouring disciplines but rather one of dialogue with those who also pursue an integrative man-environment-space approach.

To return to the starting-point of this editorial: The drifting-apart of human and physical geography and increasing specialisation only appears to be a problem of geography in German-speaking countries. In fact, it affects all disciplines, no matter what their field, nationality or language may be. After all, the intention of this editorial is to remind us to pursue specialised research on an individual or partial phenomenon in such a way that the results may fit into overarching models of the man-environment-space context. An example for this kind of transdisciplinary man-environment research in different climate zones is given by *Ehlers and Krafft (2001: Fig. 1)*.

4. Literature quoted

- Bohle, H.-G.* 2002: Editorial: The Geography of Vulnerable Food Systems. Introduction to the Special Issue of DIE ERDE. – DIE ERDE **133**: 341-344
- Borsdorf, A.* 1999: Geographisch denken und wissenschaftlich arbeiten. Eine Einführung in die Geographie und in Studientechniken. Gotha, Stuttgart
- Claussen, M.* 2001: Earth System Models. – In: *Ehlers, E. and T. Krafft* (eds.): Understanding the Earth System – Compartments, Processes and Interactions. – Berlin et al.: 147-162
- Downing, T., F. Karanja, M.S. Karrouk, F.M. Zaal and M.A. Salih* (2001): Precipitation Variability and Food Security. – In: *Ehlers, E. and T. Krafft* (eds.): Understanding the Earth System – Compartments, Processes and Interactions. – Berlin et al.: 256-263
- Ehlers, E.* 1998: Geographie als Umweltwissenschaft. – DIE ERDE **129**: 333-349
- Ehlers, E.* 2000: Geographie in der Welt von heute – Möglichkeiten und Grenzen eines integrativen Faches. – Geographica Helvetica **55**: 153-162



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Fig. 1 Integration matrix: Water as an example: availability, quality and allocation. – The AQUA/GLOWA project (Availability, Quality and Allocation of Water in Different Ecological and Socio-economic Settings) of the German National Committee for Research on Global Change, strongly orientated towards the users as well as solutions of actual problems, demonstrates the way in which ecological and socio-economic aspects should be integrated. The global result is generated by comparing the results from the individual river catchments in different landscape-ecological zones of the earth. Success of these integrative approaches not only depends on the number of specialists involved but above all on a common language and a model which they share and to which all participants contribute. (Source: Ehlers and Krafft 2001: 11, after National Committee on Global Change Research 2000) / *Das nutzerorientierte und auf Problemlösungen gerichtete Projekt AQUA/GLOWA (Availability, Quality and Allocation of Water in Different Ecological and Socio-economic Settings) des Deutschen Nationalkomitees für die Erforschung des Globalen Wandels zeigt, in welcher Weise ökologische und sozio-ökonomische Aspekte integriert werden sollten. Die globale Aussage wird durch den Vergleich der Ergebnisse aus den Flusseinzugsgebieten in verschiedenen Landschaftsökosystemzonen der Erde generiert. Der Erfolg solcher integrativen Ansätze hängt nicht nur von der Zahl der unterschiedlichen Fachspezialisten ab, sondern vor allem davon, dass sie über eine gemeinsame Fachsprache und über ein Modell verfügen, dem alle zuarbeiten.* (Quelle: Ehlers und Krafft 2001: 11, nach National Committee on Global Change Research 2000)

- Ehlers, E.* 2001: Geowissenschaften, Geographie ... und der Mensch?! – In: *Ehlers, E.* (Hrsg.): Mensch und Umwelt. Gedanken aus der Sicht der Rechtswissenschaften – Ethnologie – Geographie. Laudationes und Vorträge gehalten aus Anlass der Verabschiedung von Frau Ursula Far-Hollender ... am 13. November 2000 in Bonn. – Colloquium Geographicum **25**. – St. Augustin: 50-69
- Ehlers, E.* and *T. Krafft* (eds.) 2001: Understanding the Earth System. Compartments, Processes and Interactions. – Berlin et al.
- Ehlers, E.* and *T. Krafft* (eds.) 2001: Understanding the Earth System. From Global Change Research to Earth System Science. – In: *Ehlers, E.* and *T. Krafft* (eds.) 2001: Understanding the Earth System. Compartments, Processes and Interactions. – Berlin et al.: 3-16
- Ehlers, E.* und *H. Leser* (Hrsg.) 2002: Geographie heute – für die Welt von morgen. Gotha; Stuttgart
- Grassl, H.* 2001: Understanding Climate Variability: A Prerequisite for Predictions and Climate Change Detection. – In: *Ehlers, E.* and *T. Krafft* (eds.) 2001: Understanding the Earth System. Compartments, Processes and Interactions. – Berlin et al.: 139-146
- Heinritz, G.* (Hrsg.) 2003: Integrative Ansätze in der Geographie – Vorbild oder Trugbild? Münchner Symposium zur Zukunft der Geographie, 28. April 2003. Eine Dokumentation. – Münchener Geographische Hefte **85**. – Passau
- Leser, H.* 2002: Geographie und Transdisziplinarität – Fachwissenschaftliche Ansätze und ihr Standort heute. – Regio Basiliensis, Basler Zeitschrift für Geographie **43** (1): 3-16
- Leser, H.* 2004: Fachwissenschaften zwischen den Stühlen oder Geographie mit Zukunft? Transdisziplinarität als Chance. – In: Colloquium Geographicum **27**. – Sankt Augustin (im Druck)
- Leser, H.* und *R. Schneider-Sliwa* 1999: Geographie – eine Einführung. – Braunschweig
- Neef, E.* 1963: Dimensionen geographischer Betrachtungen. – In: Forschungen und Fortschritte **37**: 361-363
- Neef, E.* 1967: Die theoretischen Grundlagen der Landschaftslehre. – Gotha
- Pohl, J.* 1993: Kann es eine Geographie ohne Raum geben? Zum Verhältnis von Theoriediskussion und Disziplinpolitik. – Erdkunde **47**: 255-266

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