The Center for Interdisciplinary Research (ZiF)—
Epistemic and Institutional Considerations*

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When the Center for Interdisciplinary Research (ZiF) was founded in Bielefeld in 1968, it was one of the few university-based institutes in the world whose programs were oriented to cross-disciplinary research. Interdisciplinarity was at the time still rather exotic and was an exception to the common rule that research and teaching at universities had to be organized in disciplines. In the 45 years since then, there has been fundamental change in the organization of universities. Interdisciplinary centers, research programs and study programs have sprung up like mushrooms and the mission statements of almost all universities advocate the promotion of interdisciplinary collaboration as an institutional goal. In Germany, this development has experienced an additional boost in the past years through the Excellence Initiative. No less than 4.5 billion Euros were invested to create excellence clusters,

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graduate schools and institutional strategies which aim to foster interdisciplinary collaboration.

But despite these institutional changes interdisciplinarity is still today difficult and complex to realize. Academic disciplines frequently appear to cling to their respective issues of interest, their methods and institutions and refuse interdisciplinary cooperation. In this contribution, I focus on the question how this reservation can be explained and in which cases it can be considered legitimate or illegitimate. It is not enough to diagnose a resistance to reforms among the subject fields and to claim that many of their representatives act like tribesmen who defend their territory against invaders and show a tendency toward stronger parceling than toward opening borders. In many cases, scientists reject measures for restructuring their research because they perceive these measures as top-down orders. In particular, however, I want to show that there are relevant epistemic reasons why the collaboration between different disciplines is successful to different degrees.

In the following, I first focus on the question which reasons speak for interdisciplinarity (1); I will contrast these reasons with institutional interests (2). Some epistemic considerations will follow (3). In the main part, I will take a differentiated look at interdisciplinary forms of collaboration and their scientific results by using a typological classification (4). In conclusion, I will present some institutional observations on the promotion of interdisciplinarity at universities.

(1) **Why Interdisciplinarity?**

Interdisciplinarity should not be confused with two distantly related phenomena: on the one hand, the vision of a unified science (as in Plato, Leibniz or the Vienna Circle) and, on the other, the call for an extensive humanistic education. Interdisciplinarity cannot be considered as a way of lifting all boundaries between subjects nor can the personal specialization of scientific work be reversed. Thus, the call for cross-
disciplinary activities or even a new unity of the sciences is at most only part of the pre-history of interdisciplinarity. The often cited dictum of Georg Christoph Lichtenberg: “Who does not understand anything but chemistry does not even understand it properly” („Wer nichts als Chemie versteht, versteht auch die nicht recht“) may be appropriate in view of the entire knowledge of an epoch—and be truly appropriate in view of an ideal of comprehensive personality development. However, it does not fit the specificity of our concept. Thus, a reflected concept of interdisciplinarity first appeared as late as 1929, as Balsiger’s brief history of the term shows.¹

The conceptual core of interdisciplinarity is the idea of a scientific collaboration. In the course of doing research, one regularly encounters problems that can only be solved by means of expertise from other fields. The object of research can, however, still remain the same highly specialized area as before. Thus, interdisciplinary cooperation does not necessarily lead to a significant change of perspective of those involved or a thematic opening. The specialists can remain as specialized as before—they merely realize that they need to collaborate in certain cases.

In the current debate, the societal perspective also plays a crucial role, be it national or international in scope. While it often seems as if the disciplines tend toward concentrating on more and more internally defined subtle issues, pressing social, technological and ecological problems are more and more difficult to ignore. These so-called real world problems can surely not be solved within the boundaries of the historically developed disciplines. Rather, interdisciplinary connections of research need to be created in order to bring together the entire existing knowledge and to conduct research that is problem-oriented. Problems that urgently need such an interdisciplinary approach are

¹ The first mentioning of the term “interdisciplinarity” was identified by the sociologist David L. Sills in the Sixth Annual Report, 1929-1930 of the Social Science Research Council (Balsiger 2004, 410).
climate change, energy supply, ecological sustainability and the global financial system.

(2) INSTITUTIONAL INTERESTS

Both the arguments for the necessity of interdisciplinarity as well as the societal relevance of interdisciplinary research were already taken up in the 1960s by science policymakers and university planners and connected to considerations on the reorganization of research and structures of higher education. Thus, Reinalter states (2011, 368): “It was primarily a postulate regarding the organization of research because the traditional structures of the primarily university-based European research enterprise was considered insufficient with respect to the in-creasing complexity of problems.” (“Dabei handelte es sich in erster Linie um ein ‘forschungsorganisatorisches Postulat’, weil die traditionellen Strukturen des vorwiegend an die Universitäten gebundenen europäischen Forschungsbetriebs wegen der wachsenden Komplexität der Fragestellungen und Problemfelder als ungenügend empfunden wurden.“). In his conception of the soon to be founded University of Bielefeld, Helmut Schelsky took up similar considerations. By cross-disciplinary research institutes and the founding of a Center for Interdisciplinary Research as a kind of incubator for interdisciplinary projects, the new university was to have a structure that meets these considerations. As a realistic thinker, Schelsky did not pursue a reverse-oriented reconstruction of a unity of the sciences; however it may be designed, but stated appropriately:

“The claim does not rest on a universal synthesis of the sciences or their results but aims at the cooperation of disciplines for the formulation and research of problems that have different disciplinary aspects, thus at the development of partial scientific unity regarding the empirical subject matter.” („Die hier liegende Forderung geht nicht auf eine Universalsynthese der Wissenschaften oder ihrer Ergebnisse aus, sondern zielt auf eine Kooperation der
Fachdisziplinen zur Entwicklung und Erforschung von Fragestellungen, die verschiedene Fachaspekte haben, also zur Entwicklung partieller wissenschaftlicher Einheit am empirischen Gegenstand.“) (Schelsky 1967b, 72).

Here, he mainly abstained from epistemological reflections. For him, it was rather about institutional and organizational aspects.

At about the same time, the German Research Foundation (DFG) began to implement Collaborative Research Centers (CRC) and thus supported the emergence of cross-disciplinary structures at universities. At some locations, large DFG research centers evolved from these CRCs which, in turn, were to become the institutional predecessors of the even larger Excellence Clusters that were developed in the framework of the Excellence Initiative. Out of initially six DFG research centers, 43 Excellence Clusters have meanwhile developed throughout Germany. But not only interdisciplinary research centers within universities were stimulated. Additionally, the institutional strategies of the universities were strongly influenced by the Excellence Initiative. Resulting from the criteria formulated in the announcement, all applying universities implemented the promotion of cross-disciplinary research in their institutional strategies. Thus the Excellence Initiative influenced the structures or at least the institutional missions of the German universities to a remarkable extent.

But regardless the Excellence Initiative, the advantages of an interdisciplinary orientation for universities are obvious: Limited budgets and an increasing competition force universities to create interdisciplinary research foci in order to sharpen the university’s profile, to increase the visibility of research activities, to implement a targeted allocation of funds and to apply for third-party funds to a greater extent. Even though the long-term integration of cross-disciplinary centers, graduate schools and research centers will confront university leadership with significant problems (see Schimank in this volume), there seems to be no alternative to this strategy.

In addition to this institutional strategy of concentrating resources and developing a profile, it has become more and more important for universities to legitimize themselves among society (Weingart 2010).
This is a side effect of a development in the course of which universities have been pushed more and more toward the center of the current knowledge societies. The expectations toward the problem-solving competencies of science have grown continuously. Society brings its interests, as a stakeholder, into play, and expects proof that science provides useful results, especially in times of highly indebted national budgets. With an interdisciplinary strategy, a university signalizes that it produces “useful knowledge.” Thus, it is no coincidence that research foci are oriented toward the grand challenges of humanity. The University College London, for example, has implemented focus areas in the fields of Global Health, Sustainable Cities, Intercultural Interaction and Human Well-Being. The label interdisciplinarity thus also serves as a communication strategy with the public in a time when, despite or because of the increasing significance of science, the pressure of societal legitimation grows continuously.

Confronted with the requests of the policy makers and the society, as well as stimulated by third part funding, universities have established interdisciplinarity as a conventional strategy to signalize an orientation to reform and future viability (see Frodeman in this volume).

(3) EPISTEMIC CONSIDERATIONS

In contrast to this development, there is little clarity in science on when and under which conditions, interdisciplinary work is fruitful and when it is not helpful. In the literature on interdisciplinarity, which mainly concentrates on questions of sociology of science, the reservation and skepticism of a lot of researchers regarding interdisciplinary activities is usually explained with conservative structures and forms of organization of the subject areas. The researchers would react in such a way in order to ensure resources and reputation for their respective field. Dissidents and border liners would be often marginalized and would
have almost no chance in the competition for job appointments (s. e.g., Klein 1990, 77 ff. or Becher and Trowler 2001).

Epistemic considerations on interdisciplinarity are made far more rarely. One exception is Winfried Löffler who, in this context, asked the interesting question of why “interdisciplinary research projects/research approaches” are frequently spoken of but “interdisciplinary theories/interdisciplinary presentations and interdisciplinary terms” are hardly mentioned (Löffler 2010, 161). He refers to the differentiation between material and formal aspects of one item that was already present in Aristotle—here between the *material object* and the *formal object* of research. *Material objects* are the objects of research; *formal objects* contain the research question, the perspective of the study.\(^2\) Thus, disciplines can deal with the same *material objects* while the *formal objects* can be entirely different. Interdisciplinary concepts, theories or explanations, however, would presuppose common *formal objects*. Löffler here formulates three conditions which should be existent for a fruitful interdisciplinary cooperation.

They work best:

1. where the involved disciplines have the same *material object* and
2. where the respective *formal objects* do not differ too much from each other or (if 1 and 2 are not fulfilled)
3. where the *material* and *formal objects* of the involved disciplines are closely tied to each other and the regularities between them are well known or can at least be estimated. (Löffler 2010, 162 f.)

The differentiation between *material* and *formal objects* indicates one significant difficulty in interdisciplinary cooperation: Interest in the same *material object* often suggests scientific proximity which soon turns out to be misleading. Interdisciplinary projects often have to

\(^2\) More palatable is probably the comparable distinction between *objects of experience* and *objects of research* by Franz-Xaver Kaufmann (Kaufmann 1987, 68).
deal with misunderstandings that are created by the use of similar terms which, however, have very different meanings. These misunderstandings are particularly problematic as they often occur only in the course of intensive collaboration. The struggle for common concepts or even a common language is one of the biggest challenges and, at the same time, one of the most important preconditions for interdisciplinary collaboration. Thus, from an epistemic perspective, interdisciplinarity has significant requirements. The success of cross-disciplinary cooperation largely depends on whether epistemic interfaces between the involved disciplines resp. disciplinary perspectives can be created. Epistemic interfaces, however, require shared research questions, shared methods or shared theories.

(4) **Typology of Interdisciplinarity**

Looking at the forms of collaboration between disciplines, it becomes apparent that these are so different that the term interdisciplinary nears a questionable equivocation. In order to differentiate different degrees of interdisciplinarity, a number of typologies have been created. These, however, usually assume integration as the most common benchmark and interpreted differences—in reference to observations in sociology of science—as effects of the social contexts (Klein 2010, 17). Here, always an ideal image of interdisciplinary collaboration is created which brings together the different approaches as closely as possible. The weakness of such an ideal-typical description is that epistemic aspects are not systematically taken into account. Preconditions, which can be realized more easily in the natural sciences than in the humanities and social sciences, are then implicitly assumed.

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3 An exception is the typology of Heckmann 1972, which corresponds strongly to the one presented here.
Based on the considerations in (3), I will now attempt to create a typology which makes it possible to differentiate different preconditions and results of interdisciplinary forms of collaboration according to epistemic aspects. The degree of realized, resp. needed epistemic intersections can—thus my thesis—be an important anchor for such a typology. To illustrate the different types of interdisciplinarity, I will refer to research groups that have worked at Bielefeld’s Center for Interdisciplinary Research. This differentiation, however, follows a rather rough sorting and does not take include sub-groups which exist in every research group. While scientific collaboration is intensive to different degrees depending on the subject matter, it should not be overlooked that at least five of the six here presented types of interdisciplinary collaboration can be scientifically very fruitful. It is, however, another question if every form of interdisciplinarity should be institutionalized. Here, skepticism is appropriate and I will return to this issue in the final section of this article.

From the perspective of promoting research and of science administration, in particular of the ZiF, it becomes apparent that one needs to differentiate between at least six types of collaboration.

1) *Egalitarian Collaboration*: This is surely the ideal form of successful interdisciplinarity. This type realizes an interactive collaboration between the involved disciplines, in which *material* and *formal object* match and the involved partners benefit to a similar degree; it is a win win situation. This type makes interdisciplinarity seem extremely fruitful and distinguishes it as scientifically significant. This type refers to a thematic hybrid which makes the transfer of theories and methods from one discipline to the other possible and necessary. The strong unity of the object or the method can lead to permanent collaboration and even the emergence of a new discipline. One example is the ZiF research group *Game Theory in the Behavioral Sciences*, convened by Reinhard Selten. This group operated in 1987/88 and brought together economists, scholars of political sciences, biologists, psychologists, philosophers and mathematicians. Their common interest was in developing game theoreti-
cal models of potential conflicts and cooperation strategies as well as the presentation of scenarios of balance (Gleichgewichtsszenarien). The research group contributed significantly to the development of the research field of experimental economics and to the establishment of game theory as a method that can be applied well beyond the boundaries of mathematics and economics.

2) **Subordinative Interdisciplinarity**: The subordinate use of a discipline in the framework of another discipline can also be successful in that methods of one discipline are applied to the other one. Here, collaboration does not take place at eye-level but both sides can still benefit. The unity of the method can also lead to permanent collaboration in this type without giving up the identity of the respective discipline. This type was also frequently present at the ZiF. In most cases, these were research groups which focused on applying mathematical methods and models to areas of the natural and social sciences as, for example, the research group *Stochastic Modelling in the Sciences* in 2005 convened by Friedrich Götze, Yuri Kondratiev and Michael Röckner. Another example for this type is the 1993/94 group *Prerational Intelligence* convened by Holk Cruse and Helge Ritter which was successful in transferring theoretical fundamentals from biology to robotics.

3) **Interdisciplinary Metadiscourse**: A successful special form of cross-disciplinary collaboration is furthermore the collaboration of science and the humanities in the form of discourse and metadiscourse. The exchange about paradigmatic developments within and between the disciplines and the discussion of research results relevant for our conception of the world brings together natural and social sciences and the humanities without expecting consensual results. Thus, in the debate on free will, the most important achievement is to demarcate the theoretical range of the respective other discipline and to repudiate claims of absoluteness. In addition, the philosophical debates about applied ethics are fitting examples for this type of interdisciplinarity. A good ZiF example is
the 1982/83 research group *The Probabilistic Revolution 1800-1930: Dynamics of Scientific Development* convened by Lorenz Krüger. This group studied the interdependency between the emergence of stochastics as a discipline and the changing conception of the world from a deterministic to a probabilistic point of view.

4) **Complementary Interdisciplinarity:** These are constellations in which the collaboration of different disciplines adds or completes the focus on a common field of research. Here, a loosely defined thematic connecting link serves as a common reference. Even though there is no unity with regard to object or method, the different perspectives can complement each other by composing individual pieces to a mosaic. One example is the research group *Emotions as Bio-cultural Processes*, which was convened by Birgitt Röttger-Rössler and Hans J. Markowitsch in 2004/05, or the 1991/92 group *Biological Foundation of Human Culture* convened by Peter Weingart. Both groups brought together natural, cultural and social scientists under a common topic to exchange their different disciplinary perspectives. This form can best be described as a cartography: “Rather, we documented the diversity of arguments and related them by drawing a map” (Maasen 2000, 189). An important element of complementary interdisciplinarity is to demarcate the range of competing theories: “However, there is more than cartography. On a very basic level, the group arrived at the understanding that any fundamentalist language should be avoided—one should adhere to neither biological nor sociological reductionism” (Maasen 2000, 189).

5) **Aggregative Interdisciplinarity:** A very wide-spread type of interdisciplinarity brings different disciplines and research approaches together to one common *material object*. This object can also be a term used in different areas. In fact, however, it is then often only a similar term but the methods and research questions (*formal objects*) are incongruent. An epistemic intersection is not created. This form of collaboration can serve to achieve an overview of
different approaches in one particular field of research. In contrast to type 4, in which the different research results complement each other as in a puzzle, they remain alternative to each other in this type: They form an aggregate without any connection, are observed alternatively and do not merge. The outcome of this type of interdisciplinary collaboration is mostly the systematization of the field of discourse. A closer and permanent collaboration seldom follows. An example for this form of collaboration is the 2009/10 ZiF research group *Challenges to the Image of Humanity and Human Dignity by New Developments in Medical Technology* convened by Jan C. Joerden, Eric Hilgendorf and Felix Thiele. The achievement of this group was especially to take into account the different concepts of human dignity and their application in medical-ethical and judicial contexts. The group’s edited handbook *Human Dignity and Medicine* (*Menschenwürde und Medizin*) is now a standard work of the discourse on human dignity.

6) **Type of forced collaboration between different interests (so-called hunting community):** This type can be found where there are strong incentives for applying for large third party funds. It can be described as collaboration of different interests. Frequently, not only the *formal object* is different but also the *material object*—which is often concealed by very broad formulations of titles or by equivocations in the selection of titles. These temporary communities scatter into their respective disciplines soon after the collaboration. A large amount of examples can be found in the list of project proposals of the cultural, media and social sciences. But also the recently granted “Human Brain Project” in the framework of the so-called FET-Flagship Initiative with a funding volume of 1 Billion Euros for 10 years could run the risk of becoming prey for such hunting communities.

Thus, back to our initial question: Under which circumstances can disciplines profit from interdisciplinary collaboration? They can in different constellations and under different framework conditions. Most
types of interdisciplinary collaboration do not lead to a long-term outcome, they profit from the situational exchange. In rare cases, the basis for long-term collaboration is created, which can even lead to the development of a new field of research or even a new discipline. Examples for such a merging of different paradigms, theories or methods can especially be found in the natural and technical sciences. Thus, genetics and molecular biology as a common basis have contributed to the development of the Life Sciences as a cross-disciplinary field of research (type 1). Recently, an experimental physicist told me: “In my area, I collaborate with colleagues from all around the world whose academic background I don’t even know. Regardless if we come from physics, biology or chemistry, our common interest in nanolayers is what brings us together.” The disciplinary education continues to play a dominant role, but it seems to me that many specific fields of research have emerged especially in the natural sciences in which experts from different disciplines collaborate with each other as if it were nothing exceptional. Here, interdisciplinarity functions so naturally that it is often no longer labeled as such—unless it helps in applying for funds.

In the humanities, too, there are interdisciplinary fields of research that are permanent. Similar to the natural sciences, they mostly do not emerge from top-down initiatives but in the course of scientific specialization in which new linkages are developed. An older but still relevant example are the Classics (Klassische Altertumswissenschaften) which is a collaboration between philology, ancient history, archaeology, history of art, history of philosophy etc. The same goes for the history of science. Ian Hacking, who took part in a 1982/83 ZiF research group dedicated primarily to questions in the history of probability, described the work of that group as follows: “Is the Bielefeld group a model for ‘interdisciplinarity’? Yes, of course, the participants were drawn from a number of disciplines, and worked in an institution dedicated by name and practise to interdisciplinary research. But in a sense, the answer is ‘no.’ (...) I never thought in those terms, and never once heard one of my colleagues use the word ‘interdisciplinarity.’ (...) We thought of ourselves as individuals from different disciplines
with some overlapping interest.” (Hacking 2004/2010, 196). This ZiF research group, in which historians of science, philosophers of science, physicists and mathematicians collaborated, is a good example for interdisciplinarity of type 3 (metadisciplinary discourse).

The examples from physics and the history of science make clear that a strong degree of specialization does not necessarily have to lead to an atomization of science, but that new and occasionally also cross-disciplinary linkages can emerge in the specialization.

Collaboration is particularly fruitful where a high compatibility of theories and/or methods can be created. However, the preconditions for a high epistemic homogeneity are much more likely given in the natural sciences than in the humanities. The strength of work in the natural sciences is that complex objects of study could be divided into sub-problems that can be studied in a division of labor. This meanwhile taken-for-granted form of work for natural scientists is only possible because of a broad basis of shared theories and methods. Thus, in laboratories, frequently natural scientists from different disciplines work together without reflecting or without a need to reflect on this. Even the intersections between natural sciences and engineering sciences are meanwhile so large that theme- and problem-oriented research has become very common. Also infrastructures such as large instruments and big science institutions promote interdisciplinarity in the natural sciences.

In the humanities and social sciences, the preconditions are very different. They focus on objects of study whose relevance and meaning especially depend on complex and singular conditions and which therefore require an “idiographic,” not a “reductionist,” treatment. It is thus characteristic of the humanities and social sciences to depend on a broad repertoire of approaches and methods. The plurality of methods and theories is thus a characteristic of quality and by no means an indicator for “soft standards of science.” This diversity, however, is an obstacle for interdisciplinary collaboration. Close forms of collaboration as represented by type 1 are usually not possible for the humanities and social sciences. Loose forms of collaboration are often much more
suitable. The collaboration enables the involved researchers to gain broad contextual knowledge which benefits their power of judgment with reference to their respective field.

Thus, under which conditions can disciplines profit from interdisciplinary collaboration? They truly benefit if there is a shared research interest. Depending on the field, the research question, and the constellation of the involved disciplines, the scientifically and cooperatively achieved outcome is sometimes higher, sometimes lower. Interdisciplinarity thus marks a point of transition, a state of uncertainty, which is inspiring for the researchers involved. If new linkages in research could be found, a permanent collaboration could develop which in turn could result in the constitution of a new discipline (as can be seen in special journals and in the long-term emergence of specialized teaching programs). For close and successful forms of cross-disciplinary collaboration, it can be said that interdisciplinarity as a term disappears. Basically, one can speak of a dialectic of interdisciplinarity: Where interdisciplinarity is particularly successful, it dissolves in a newly emerging discipline.

(5) Giving Meaning to Interdisciplinarity in the Organization of Universities

Finally, back to the institutional considerations: Is a university well-advised to focus on interdisciplinary structures of research? If interdisciplinary structures entail flexibility, then the answer is definitely yes. If, however, the understanding of interdisciplinarity is only tied to institutional objectives like visibility and developing of focus areas, then one should be careful: Such a practice, which can be observed at many locations, leads to the creation of artificial and top-down projects in which resources and personnel are wasted to a large extent. Interdisciplinarity as a dominant guideline for universities contains the risk that especially the disciplinary cultures of the humanities are put at risk.
This, however, shall clearly not be a self-denial of an institution whose fundamental purpose is to promote interdisciplinary projects. Quite the contrary: In the past 45 years, the ZiF has constantly proven that its interdisciplinary groups have been scientifically very productive and have sometimes achieved paradigmatic effects. Decisive, however, is the point that Helmut Schelsky already mentioned at the founding of the ZiF:

“Interdisciplinary research of different kinds today belongs to the decisive fundamentals of scientific progress and is to be institutionally integrated into the universities. The permanent specialization in interdisciplinary institutes is a misplaced route to take which eliminates the advantages of interdisciplinary research in the long run.” („Forschung verschiedenster Art gehört heute zu den entscheidenden Grundlagen wissenschaftlichen Fortschritts und ist institutionell in die Hochschulen einzubauen. Die Dauerspezialisierung in interdisziplinären Forschungsinstituten ist ein Irrweg, der langfristig die Vorteile interdisziplinärer Forschung aufhebt.”) (Schelsky 1967a, 38)

As Schelsky rightly recognized, interdisciplinarity marks a transitory status or a kind of productive exceptional state and requires an own form of institutional framework. In its structure, the ZiF is in a special way adjusted to transition: Through the temporary gathering of scholars from different disciplines, it provides an extraordinary opportunity for interdisciplinary debates, discussions and collaborations. As an institution, it thus well connects structurally rooted interdisciplinarity with flexibility in content. The special orientation on “temporary interdisciplinary collaboration” makes it possible to promote different types of interdisciplinarity: Loose forms of interdisciplinarity support the exchange and the self-reflection of different approaches and serve the systematic selection of the respective field of research. In those cases where epistemic intersections between the different approaches emerge, the participation in a research group can have an initial impact through which a permanent collaboration across subject boundaries and locations can develop. These tighter forms of interdisciplinarity can establish a long-term position at universities in the framework of
larger joint projects or research centers. In this sense, the ZiF can serve as an incubator for new ideas and future research foci. As in the words of Lorenz Krüger: “Interdisciplinary research is the work on issues that have not yet found their disciplines” (Krüger 1987, 119).

Long-term oriented interdisciplinarity that is established misjudging the differences between disciplinary cultures, however, will promote type 6 of interdisciplinarity: That of the hunting communities which—often encouraged resp. initiated under the directive of university administrations—especially gather with the objective to obtain their share of the financial resources of large research funders. Regarding some CRCs or Excellence Initiative Clusters (particularly in the humanities) one certainly can have this suspicion.

REFERENCES


