

Epistemological or Political?

Unpacking Ambiguities in the Field of Interdisciplinarity Studies

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Abstract This paper unpacks ambiguities in the field of interdisciplinarity studies (IDS), explores where they come from and how they inhibit consolidation of the field. The paper takes its point of departure in two central fault lines in the literature: the relationship between interdisciplinarity and disciplinarity and the question of whether integration is a necessary prerequisite for interdisciplinarity. Opposite positions on the fault lines are drawn out to identify sources of ambiguities, and to examine whether the positions are irreconcilable - or disagreements that may continue to coexist in a consolidated field. It is argued that if we envisage a consolidated field of IDS, there is a need to develop common ground which calls for scholars of ID to be more explicit about the meanings they ascribe to ID than we see today when the sliding between the epistemological and political dimensions of the field may go unnoticed. It is suggested that whereas ambiguity may be unwanted in the epistemological dimension, it may be quite useful in the political dimension. A systematic comparison of opposite positions offers a common frame of reference for a more productive dialogue between different positions. The analysis shows that as to integration, the difference between opposite positions can be reconciled, whereas in the relation between interdisciplinarity and disciplinarity, the positions are antagonistic and logically exclude each other. The analysis suggests that it is the premise of integration that creates the conditions of possibility for "relabelling" interdisciplinarity and for using the "silo" for disciplines.

Keywords field of interdisciplinarity studies, ambiguity, hegemony, epistemology, reflexivity

Introduction

This paper seeks to unpack ambiguities in the field of IDS, explore where they come from and how they inhibit consolidation of the field, envisaged in the foreseeable future by Frickel, Albert & Prainsack (2016). The paper takes its point of departure in two central fault lines in the literature: the relationship between interdisciplinarity and disciplinarity and the question of whether integration is a necessary prerequisite for interdisciplinarity. Most scholars of ID take a position on these fault lines, either explicitly or implicitly. Although the literature has repeatedly concluded that interdisciplinarity and disciplinary specialization are mutually dependent, apparently the relations between them continue to be open to debate, and the premise of integration is contested. This may indicate that the field of IDS is developing in different directions with the risk of engendering more fragmentation, thus compromising an agenda of consolidation. The question is whether these fault lines represent irreconcilable positions or rather, disagreements that may well continue to coexist in a consolidated field. This paper therefore sets out to examine these fault lines in more depth to identify sources of ambiguities.

Much research on interdisciplinarity emphasizes heterogeneity and ambiguity as general characteristics of the field. Ambiguities are typically attributed to the absence of a common definition of interdisciplinarity, and to the different meanings of interdisciplinarity to different people, as pointed out by Frickel et al. (2016: 8): “it is generated through different practices in different areas of research; and it is used in different ways by different groups with different interests, goals, and expectations.” Ambiguities are explicitly addressed as a challenge to theory development and to management of interdisciplinary research (Siedlok & Hibbert 2014; Frickel et al. 2016). Klein (1996: 10), in her reply to Dogan and Pahre’s (1990: 65) proposal that the word ‘interdisciplinary’ be banished from the language as “virtually devoid of real meaning today” claims that “[t]he problem is not that the word is devoid of meaning. It is replete with meaning - conflicting meaning” (Klein 1996: 10). Interestingly, the literature does not pay much attention to the possible sources of these ambiguities, how the multiple meanings ascribed to 'interdisciplinarity' may continue to amplify ambiguities, nor does it specify the concrete ways in which ambiguities may be a hindrance to theory development.

Framing the object of this paper as fault lines is one way to bring into focus what this paper argues are the most fundamental obstacles to consolidation of the field. On the one hand, and on the face of it, the immense literature seems to reflect a very diverse chorus of voices, interests, and perspectives; on the other, it is fair to assume that different positions on the fault lines result from different communities of scholars who may use the *same word to mean different things* which, in turn, and in the light of the absence of a *common* definition, may be one reason why the ongoing debate on the fault lines does not really seem to move the field forward, let alone reduce ambiguities. It is as if the writings that take opposite positions on these fault lines resemble parallel monologues rather than dialogues across the field. Therefore, one important step towards consolidation will be to bring the different positions together, systematically compare them, and identify conflicts and common ground.

This paper argues that if we envisage a consolidated field of IDS, there is a need to develop common ground¹, to develop the dialogue, and for scholars of ID to be much more explicit about the meanings they ascribe to ID than we see today, when it is not always clear when 'interdisciplinarity' is understood in a specific, epistemological sense, when it refers to an organizational principle, is used as an umbrella concept, or to "relabel" (Weingart 2000) some project that needs legitimation. It is as if whenever the terms 'interdisciplinary' and 'interdisciplinarity' are used or invoked, the risk of talking past one another is increased. A heightened transparency would facilitate theory development and, over time, make it easier to identify epistemic authority on ID². Accordingly, one objective of this paper is to draw out the opposite positions on the fault lines to identify sources of ambiguities, to map "the lay of the land" (Schwartz-Shea and Yanow 2012: 84) and thus provide a point of departure for a common frame of reference for a more productive dialogue between different positions. The objective is not to eliminate disagreements or to erase ambiguities, but to get them out in the open to understand what they are and where they come from.

This paper considers these fault lines to be underlying meaning structures in the field of IDS, and the existence of fault lines and conflicting meanings as an indication of the presence of antagonistic forces in the field and thus the presence of more than one meaning system. This paper will use discourse theory to examine how *different* meanings are constructed around what is apparently the *same* concepts, and disentangle the fault lines by exploring the way in which social antagonisms are constructed. Struggles over meaning can be understood and empirically explored as a hegemonic struggle that is structured around *floating signifiers*, which are the signs that are overflowed with meaning and therefore particularly open to different ascriptions of meaning. This paper will particularly focus on 'interdisciplinarity' and 'interdisciplinary research' as floating signifiers. As noted by Howarth (2015: 12), "floating signifiers are ideological elements that are not securely fixed in a particular discourse and can thus be constructed in diverse ways." Thus, the first step of this paper's analysis will be to identify how two opposite positions on the fault lines construct and aim to stabilize different meanings for the floating signifiers in different discourses, and next to compare and discuss the positions in relation to consolidation of the field.

This paper's understanding of the field builds on Weingart & Stehr's (2000) characterization of scientific disciplines as both intellectual and social structures, assuming that the dual character of disciplines also applies to interdisciplinarity. This paper will operationalize this duality in two dimensions of ID: an *epistemological* and a *political* for three reasons: First, the duality is in itself a source of ambiguities and will be used as an inescapable backdrop to the analyses of fault lines. Second, focusing on ID in an epistemological sense only will not be sufficient to analyze the different meanings of ID, and it is suggested that the field of IDS should explicitly embrace and theorize both the epistemological and political dimensions of the field. Third, ambiguity may play different roles depending on the dimension. The literature on ID tends to place ambiguity in a rather negative light, presenting it as a hindrance to theory development. It is not that this paper disagrees with the literature on this point, but it implies that it is the

¹ Bromme (2000) draws on the theory of common ground (Clark 1992,1996) when developing his psychological approach to interdisciplinarity. "The common ground theory postulates that every act of communication presumes a common cognitive frame of reference between the partners of interaction called common ground. The theory postulates further that all contributions to the process of mutual understanding serve to establish or ascertain and continually maintain this common ground" (Clark 1992,1996) quoted in Bromme (2000: 119). This is the understanding of common ground for the field of IDS that this paper is based on. Furthermore, Bromme's (2000) insights on how mutual communication and comprehension are possible in the presence of different perspectives would be most relevant to apply to the field of IDS that draws scholars from many disciplinary backgrounds, and would merit further research.

² For bounding of epistemic authority, see Madsen (2016)

epistemological dimension of ID we are referring to. The political dimension, however, will rather make use of "strategic ambiguity" (Eisenberg 1984), and it is argued that differentiating analytically between the two dimensions is fundamental to theorizing the field.

The paper is organized as follows. First, I briefly discuss relevant literatures on the relationship between interdisciplinarity and disciplinarity, and definitions of interdisciplinarity with a focus on ambiguity, and the need for differentiating between term/signifier and concept/signified is highlighted. Then I outline the paper's analytical framework building on the duality of the field and the pros and cons of ambiguity; the discourse theoretical framework is introduced, with a focus on the importance of nodal points that make it possible to systematically compare the positions on the two fault lines. In the analysis section I first examine two papers separately and in great detail. The papers are singled out to expose opposite positions on the fault lines and show how they construct different meanings for 'interdisciplinary research'. This analysis serves as a basis for bringing the opposite positions together and discuss how they may or may not contribute to consolidation of the field and with the epistemological dimension as its point of departure. The discussion section is an ongoing disentanglement of the fault lines against the background of the epistemological and political dimensions and their different logics, including a table summarizing the results. Finally, areas for further research are suggested.

Ambiguity and Fault Lines in the Literature on Interdisciplinarity

Ambiguity and heterogeneity are recurrent characteristics of the discussions of interdisciplinarity, and ambiguity is explicitly addressed as a challenge to theory development and to management of interdisciplinary research. (Siedlok & Hibbert 2014; Frickel et al. 2016), and they relate the heterogeneity to the absence of a common definition of the concept. Klein (2010a) repeatedly refers to interdisciplinarity as a pluralistic idea. Jacobs (2014: 77) addresses the "plethora of terminology" characterizing discussions in this area as sometimes "plagued by an overabundance of terms." Jacobs (2014) highlights the "jungle of terminology," also echoed by, for example, Horlick-Jones and Sime (2004), Wall and Shankar (2008), Jacobs and Frickel (2009), Moran (2010), Repko (2012), Siedlok and Hibbert (2014). Ambiguity also tends to be related to ID being used in a generic manner (Horlick-Jones & Sime 2004; Wall and Shankar 2008). Conceptual ambiguity (as opposed to terminological) is stressed by Huutoniemi, Klein, Bruun and Hukkinen (2010) and Frickel et al. (2016) who relate ambiguity to "our understandings of interdisciplinarity" (p. 9). Siedlok and Hibbert (2014) address "the imprecise use of the term" 'interdisciplinarity,' and argue that ambiguity may be a hindrance to management efforts, and Frickel et al. (2016) suggest the identification of "conceptual ambiguities that can impede understanding and theory development" (p. 6).

Definitions of Interdisciplinarity

One of the most frequently cited definitions of interdisciplinarity is from the report Facilitating Interdisciplinary Research (2004):

Interdisciplinary research (IDR) is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice. National Academies (2004: 2).

This definition, however, is not generally accepted and coexists with broader definitions, such as, e.g., Jacobs and Frickel (2009) who use interdisciplinary and interdisciplinarity as general terms for describing interrelationships among academic disciplines defining ID as “communication and collaboration across academic disciplines” (p. 44). And Siedlok and Hibbert refer to “the lack of consensus around the existing set of definitions” (2014: 195). Huutoniemi et al. (2010: 82-83) explicitly introduce a distinction between “interdisciplinarity in a specific sense” and “interdisciplinarity in a generic sense” in types of interdisciplinary interaction. The basic concepts of their typology are multidisciplinary research and interdisciplinary research. And interdisciplinarity is specific in this strict sense when compared to multidisciplinary, whereas the more generic use of ‘interdisciplinary’ is “a characterization of all collaboration across epistemological boundaries” (p. 83).

This generic definition of ID has a striking resemblance to Jacobs and Frickel’s looser definition mentioned above. However, Jacobs and Frickel are sceptical about “the notion that interdisciplinarity will substantially advance the integration of knowledge” (2009: 60). According to Klein (2010b), “integration is the most common benchmark and, combined with degrees of disciplinary interaction, provides a comparative framework for understanding differences in types of interdisciplinary work” (p. 17). However, the definition that guided Lattuca’s study (2001, 2003) left the question of integration open. Barry et al. (2008) distinguish between three modes of interdisciplinarity, where only one of them includes integration. According to Holbrook (2013), “the notion of ‘integration’ is so widespread in the literature that to question whether interdisciplinarity involves integration is almost heretical” (p. 1877), and Klenk & Meehan (2015) problematize the assumption of “the integration imperative.” This suggests that ‘interdisciplinarity’ both represents a concept that depends on integration, as well as another that does not; and, add to this the possible confusion that may arise from the level of generality in “interdisciplinarity in a generic sense.” A discourse theoretical perspective would have it that we are talking about different concepts represented by the same signifier ‘interdisciplinarity.’ This, together with the lack of consensus around existing definitions, further points to more than one epistemic community in the field.

Relations between Interdisciplinarity and Disciplinarity

Klein refers to the “rhetorical opposition of disciplinarity and interdisciplinarity” as “an oversimplified dichotomy that obscures the more subtle interactions that do take place” (1990: 105) and she refers to this relationship “as a corrective or counterforce and as a complementary partner in the process of knowledge production” (1990: 105). Campbell (1969) saw the administrative and institutional organization of the disciplines as impediments to the development of a truly interdisciplinary omniscience and called for the invention of “alternative social organizations which will permit the flourishing of narrow interdisciplinary specialties” (1969: 348) as also discussed by Salter & Hearn (1997) and Jacobs (2014). Weingart (2000) scrutinized the apparent paradox of an ongoing discourse on interdisciplinarity and concluded that interdisciplinarity and specialization are parallel. “They are mutually reinforcing strategies, and, thus, complementary descriptions of the process of knowledge production” (p. 40). This is echoed by Siedlok and Hibbert (2014) who point out how the literature has repeatedly concluded that interdisciplinarity and disciplinary specialization are mutually dependent (Siedlok & Hibbert 2014: 198).

Jacobs (2014) studies why the “silo” idea remains so appealing despite all the evidence against it, and his analyses suggest that disciplinary “silos” are not nearly as limiting as assumed by some critics (p. 119), showing how ideas flow

quite frequently between fields. (p. 225). Frickel et al. (2016) question the assumption that disciplines operate as institutional silos and ask: "If disciplines are not silos, why is the silo rhetoric so pervasive?" This question will be addressed throughout the paper and a possible answer is provided in the discussion section. Weingart (2000) highlights how the object 'interdisciplinarity' has come to connote and has been persistently used for 'innovation.' He discusses the contradictory pattern: "interdisciplinarity ... is proclaimed, demanded, hailed, and written into funding programs, but at the same time specialization in science goes on unhampered, reflected in the continuous complaint about it." And he goes on to analyze the connotations that are used with the polarized structure: "Disciplines carry the connotation of and are valued (!) as being static, rigid, conservative, and averse to innovation. Interdisciplinarity carries the connotation of and is valued as being dynamic, flexible, liberal, and innovative"(p. 29). Weingart's conclusion is that the discourse on interdisciplinarity is, in effect, a discourse on innovation as a result of opportunism in knowledge production. And he suggests that under pressures of legitimation scientists relabel their research projects in order to 'fit in.' A conclusion that may find support in Frickel et al.'s (2016) emphasis of a need for research into the strategic dimensions of interdisciplinary research.

Introducing Analytical Distinctions in the Field of IDS

Term/signifier and concept/signified

How concepts, terms and the relation between the two may produce ambiguities, has been largely overlooked in the scholarly literature which points to a need for some clarification. For example, Frickel et al. (2016) advocate examination of assumptions to help us "identify conceptual ambiguities" (p. 6). But how would that be possible? Concepts are cognitive, mental images that are not directly accessible unless they are articulated in words. The point is that the literature's common use of 'terms' and 'concepts' can mask significant differences in that both the word/term/signifier and the concept/signified may be a source for ambiguities, as may the relation between them. Weingart (2000) implicitly touches upon the relation between signifier and signified when addressing the "relabelling" that scientists may do, which in terms of this paper is an illustration of how a signifier is disconnected from its signified and appropriated for other purposes. The mechanism is well-known to scholars of ID, but the relationship between signifier and signified has been left unattended so far in the literature and is in need of theorizing.

The epistemological and political dimensions of the field - and the different roles of ambiguity

This paper's understanding of the field of IDS builds on Weingart & Stehr (2000) and their characterization of disciplines as "frames of reference for intellectual work, and at the same time they are, ... in the business of representing 'interests'" (Weingart & Stehr 2000: 111). Thus, this paper introduces an analytical distinction between an *epistemological dimension* of ID and "the business of representing 'interests'" which this paper broadly describes as the *political dimension*³ of ID. This backdrop is important to the distinction between signifier and signified, and the role of ambiguity, as "relabelling" implies that the label 'interdisciplinarity' is connected to a signified that may be political rather than epistemological; and whereas ambiguity may be unwanted in the epistemological dimension, it may be quite

³ Distinctions between what might be social and political are not elaborated on in this paper, as the main interest is the differentiation between epistemological and political, following Bourdieu's claim that "epistemological conflicts are always, inseparably, political conflicts" (1975: 21).

useful in the political dimension⁴. The epistemological dimension may be taken to subscribe to clarity, consistency, clearly defined concepts, and generally, the absence of ambiguity, whereas in the political dimension, ambiguities may play a different role because other logics are at play.

When it comes to discussion of relations between interdisciplinarity and disciplinarity, the literature falls short of a sufficient account of Weingart's (2000) conclusion that the discourse on interdisciplinarity is a discourse on innovation, as well as the question of the "silo rhetoric" (Frickel et al. 2016) that still seems to defy explanation. Therefore, it is assumed that the analytical distinction between two dimensions will allow us to capture and, to some extent, explain how 'innovation' is used for 'interdisciplinarity' and 'silo' is used for discipline. And therefore, this paper's analysis of fault lines is premised on the assumption that the two dimensions are an unavoidable backdrop and that analytically, they are distinct. The important point is to consider ambiguity in relation to one domain at a time, as ambiguity may play different roles depending on the dimension. Ambiguities cannot be erased, but unpacking them, it is argued, makes it possible to spell out meanings and assumptions requiring scholars to be more reflexive and explicit about which ambiguities we are dealing with⁵. In the analysis that follows, the point of departure is the fault lines in relation to the epistemological dimension, and in the subsequent discussion, the interaction between the two dimensions will be addressed.

Discourse Theory and Constructivist-Interpretivist Methodology

This paper's discourse theoretical framework, based mainly on Ernesto Laclau and Chantal Mouffe's work (Laclau & Mouffe 1985; Laclau 1990, 1996), further developed within the so-called Essex School. The framework has its starting point in the poststructuralist idea that discourse constructs the social world in meaning, and that, owing to the fundamental instability of language, meaning can never be permanently fixed (Jørgensen & Phillips 2002: 6)⁶. Torfing defines discourse, at an abstract level, as "a relational ensemble of signifying sequences that weaves together semantic aspects of language and pragmatic aspects of action" (2005: 14). Laclau and Mouffe describe discourse as first and foremost "a kind of social practice that links together and modifies heterogeneous elements in changing historical formations" (1985: 96), which presupposes a world of contingent elements which can be linked together in various ways (Howarth 2015: 10). This practice is considered *political*, and a practice that is captured by the operation of

⁴ Meyerson (1991: 255) describes how ambiguities can arise from lack of clarity, multiple meanings resulting from fragmented, contradictory interests and competing ideas. Canet and Damart (2016: 3) stress how keeping concepts ambiguous and therefore open to various interpretations "encourages their adoption by organisations which are relatively free to define the way in which they use them." They build on Eisenberg's (1984) "strategic ambiguity" which was a reaction to the traditional view of clarity as the gold standard of communication effectiveness. Eisenberg defined strategic ambiguity as purposefully equivocal communication, as a way to reconcile needs for cohesion and coordination with the freedom required to ensure flexibility and creativity (1984: 9). Political theorist Michael Freeden claims that the construction of ambiguity is a central feature of political discourse, arguing that "[a]mbiguity, then, is not only the inevitable by-product of polysemy, but it is a recipe for political co-existence." And he continues: "[t]he structural tolerance of words in containing multiple, connected but not identical meanings is important to the adequate functioning of political and ideological orders" (Freeden 2004: 10).

⁵ I adhere to the view of Bourdieu that the primary target of reflexive analysis is "the social and intellectual unconscious embedded in analytic tools and categories" (Bourdieu and Wacquant 1992: 36).

⁶ One basic tenet of discourse theory that it shares with interpretive methodology, is that "language is not a transparent referent for what it designates nor does it merely 'mirror' or 'reflect' an external world but, instead, plays a role in shaping or 'constituting' understandings of that world ..." (Schwartz-Shea and Yanow 2012: 43). In general, constructivist analyses have a close focus on language and its role in creating reality, and both constructivists and interpretivists are interested in the context and in how meaning is generated.

political logics and the concept of hegemony (Howarth 2015: 7); politics are considered an ontological dimension of social relations, and, in general, Laclau and Mouffe's social ontology involves a strong attachment to a Gramscian concept of hegemony (Torfing 1999).

Articulation is defined as a practice that establishes a relation among discursive elements that invokes a mutual modification of their identity, and the practice of creating and temporarily fixing meaning. Laclau and Mouffe define articulation as "any practice establishing a relation among elements such that their identity is modified as a result of the articulatory practice. The structured totality resulting from this articulatory practice, we will call discourse" (Laclau and Mouffe 1985: 103). As Torfing (2005: 15) states, "[a]rticulations that manage to provide a credible principle upon which to read past, present, and future events, and capture people's hearts and minds, become hegemonic." Thus, discourse is constructed in and through *hegemonic struggles* (Torfing 2005: 15). The "modification of identity" means that as soon as an element is articulated to a signifying chain in a discourse, its identity changes. Such elements are conceived of as *floating signifiers* (Howarth 2015: 10) or "contingent ideological elements" (Glynos & Howarth 2007: 152), whereas moments are those elements that are (more) firmly positioned in a particular discourse. Meaning is fixed around certain *nodal points* (Laclau and Mouffe 1985: 112) which are privileged signs around which the other signs are ordered.

This framework lends itself to an analysis of 'interdisciplinarity' and 'interdisciplinary research' as signifiers sorting out the different meanings ascribed. For example, 'interdisciplinary research' in the NAS definition quoted above, acquires its meaning from 'integration' as a nodal point. This means that the floating signifier 'interdisciplinary research,' as an element that is not yet fixed, gains a specific meaning by being tied together with a specific nodal point⁷. Such relational-based analysis of meaning is hardly novel to scholars of ID, but the point of this paper's approach is that it allows us to draw out *different* meanings - despite *identical* signifiers - because of *different* nodal points in *different* discourses that each seek to fix meaning their own way, and it is the struggle between the discourses that will allow us to uncover the sources of ambiguities created by different nodal points and/or different signifiers, for example, by capturing the sliding of the signs between epistemological and political.

As the premise of integration is contested in the literature, the nodal point that confers identity to 'interdisciplinary research' in the NAS definition only partially fixates the meaning of 'interdisciplinary research,' and other nodal points can rearticulate and disarticulate the unity that the definition establishes between 'integration' and 'interdisciplinary research.' Thus, one entry point to capture the struggle between discourses is the floating signifier. The struggle between discourses is about the fixation of floating signifiers. It is the actions of forces, which draw frontiers between different positions that will try to temporarily stabilize and fix the meaning of the floating signifiers (Howarth 2015: 10). As noted by Torfing (2005: 15), the hegemonic articulation of meaning and identity is intrinsically linked to the construction of *social antagonism*, which involves the exclusion of "a threatening Otherness" that stabilizes the discursive system while, at the same time, preventing its ultimate closure.

⁷ When exactly this meaning is ascribed to 'interdisciplinary research,' all other possible meanings that the sign could have had, are excluded. Therefore, "a discourse is a reduction of possibilities. It is an attempt to stop the sliding of the signs in relation to one another and hence to create a unified system of meaning" (Jørgensen and Phillips 2002: 27). The discourse establishes a closure, but it is only a temporary stop to the fluctuations in the meaning of the signs, because a discourse can always be undermined by articulations that place the signs in different relations to one another (Jørgensen & Phillips 2002: 39).

In order to account for the construction of social antagonisms, Laclau and Mouffe introduce the logics of *equivalence* and *difference* (Howarth & Stavrakakis 2000: 11) which variously refer to the construction of identities as equivalent and/or different. The logic of equivalence is a logic of the simplification of the social space, while the logic of difference is a logic of its expansion and increasing complexity (Laclau & Mouffe 1985: 117). A discourse that principally employs the logic of equivalence seeks to divide social space by condensing meanings around two antagonistic poles (Howarth 2000: 107), and in the context of this paper, these logics are important for scrutinizing the polarization of interdisciplinarity and disciplinarity evident from the literature.

This Paper's Approach

This paper frames an exploration of ambiguities in the field of IDS as fault lines as a way to locate lines of conflict in the literature. This is done by identifying nodal points to show how different meanings are attributed to 'interdisciplinarity' and 'interdisciplinary research' and to discuss if the conflicts represent irreconcilable positions or merely disagreements that may well continue to coexist in a consolidated field. Thus, the nodal points that confer identity to the floating signifiers serve as the basis for comparing opposite positions. As there are no criteria in the literature for comparing disagreements or discussing ambiguities that immediately suggest themselves, this paper set out to identify opposite positions to the fault lines. First different definitions of ID were compared, with a focus on research that most explicitly addresses the identity of ID, and, where possible, in relation to ambiguity, confusion, conceptual muddle, etc., i.e., meta-level literature, and sources that are generally well-recognized⁸. These were checked against all references in comprehensive reviews as, e.g., Siedlok and Hibbert (2014) and Jacobs and Frickel (2009), assuming that meta-level research relating to definitions of ID, cannot avoid taking a position on the fault lines, either explicitly or implicitly.

I chose papers based on the NAS definition, on the one hand, and on the other, papers based on broader and more loose definitions as in Jacobs and Frickel (2009). In-depth reading of Jacobs and Frickel (2009) together with the literature that adheres to the NAS definition and integration, and that Jacobs and Frickel (2009) critically assess, left the impression of, roughly speaking, two very different discussions of what appears to address the same field, and on that basis two papers were selected with the purpose of exposing opposite positions on the fault lines. To represent integration as a premise, Bruun et al. (2005) was chosen, as they explicitly make a distinction between “interdisciplinarity in the specific sense” and “interdisciplinarity in a generic sense” which lends itself to an initial identification of logics of equivalence and difference⁹. To represent the opposite position, Frickel et al. (2016) was chosen. A noticeable difference between the two papers is that integration is a premise in Bruun et al. (2005), whereas it

⁸ e.g. Barry et al. (2008); Bromme (2000); Buanes & Jentoft (2009); Campbell (1969); Dogan & Pahre (1990); Gieryn (1983); Huutoniemi et al. (2010); Jacobs (2014); Jacobs & Frickel (2009); Klein (1990; 1996; 2000; 2010a, 2010b, 2014); Krishnan (2009); Lattuca (2001; 2003); Messer-Davidow, Shumway & Sylvan (Eds.) (1993); Repko (2012); Siedlok & Hibbert (2014); Salter & Hearn (1997); O'Rourke, Crowley, Eigenbrode & Wulfhorst (Eds.) (2013); Weingart (2010); Weingart & Stehr (2000).

⁹ Initially, to represent integration as a premise, Huutoniemi et al. (2010) was chosen, as they explicitly make a distinction between “interdisciplinarity in the specific sense” and “interdisciplinarity in a generic sense,” but this paper was later substituted with Bruun et al. (2005) as this is where the argument is developed more explicitly. Besides aligning with the NAS definition, this work rests on a categorization of interdisciplinary research that is frequently quoted in the literature, including Aboelela et al.'s (2007) literature review which found that “[i]n all sources there was common acknowledgement of a continuum with respect to interdisciplinary research and the degree of synthesis involved in the process and achieved in the outcome” (Aboelela et al. 2007: 329.).

is not in Frickel et al. (2016) who also explicitly include disciplines¹⁰. These important differences suggest two different *meaning systems*, i.e., different discourses. In the analysis below, I will refer to these as *the integration-premised-discourse* and *the discipline-inclusive-discourse*, respectively¹¹. Further, a caveat is called for in that the nodal points identified as the point of departure for the paper's analyses are likely to appear trivial to scholars of ID as they are contained in or inferred from the existing literature. Notwithstanding, this paper will seek to show the advantage of nodal points over a focus on concepts in that they allow us to draw out *different* meanings - despite *identical* signifiers - in *different* discourses that each seek to hegemonize the field.

Disentangling Fault Lines

The Integration-premised-Discourse

The distinction introduced by Bruun et al. (2005) between “interdisciplinarity in the specific sense” and “interdisciplinarity in the generic sense” builds on an empirical study in which a sample of research proposals was analyzed to find out “what proportion of the research proposals was interdisciplinary, and what kinds of IDR were suggested in the proposals” (p. 79-80). Bruun et al. (2005) develop a taxonomy for interdisciplinary research (p. 87) based on “the common distinction between multi- and interdisciplinary* research”; they explicitly qualify “interdisciplinarity in the specific sense” with an asterisk (*) to address “the double meaning of the concept of interdisciplinarity” (p. 81). “Interdisciplinarity in the specific sense” is contrasted to multidisciplinary, whereas “interdisciplinarity in the generic sense” is contrasted to disciplinarity. Multidisciplinary research is characterized as “not being integrative in the sense of producing a shared understanding or synthesis” (p. 80), whereas interdisciplinary research in the specific sense “integrates separate disciplinary data, methods, tools, concepts, and theories ...” (Bruun et al. 2005: 80). They specify that “[r]esearch becomes interdisciplinary in the generic sense ... whenever the research activity involves several fields in some more or less loosely coupled way” (p. 81).

From the perspective of meaning construction within a discourse theoretical framework, we see how Bruun et al. construct the identity of three entities: multidisciplinary, “interdisciplinarity in the specific sense,” and

¹⁰ The body of work that adheres to the NAS definition is increasingly contested by a growing body of more critically oriented research represented in this analysis by Jacobs and Frickel (2009), Jacobs (2014) and Frickel et al. (2016), the latter being the key paper chosen to represent the opposite position of Bruun et al. (2005).

¹¹ For the purposes of this paper, the narrowing down of the literature that informs the fault lines, and the choice of two key papers for analysis is a result of iterative processes of extensive reading and re-reading the field's literature, combined with general knowledge of the field and based on previous research related to ID (Madsen 2012, 2016, 2018). The procedure for selecting texts for separate analysis conforms to the criteria developed in constructivist perspectives on document studies that Justesen and Mik-Meyer (2012: 126-27) describe as “pragmatic and loose” since “suitable documents are texts that will be able to shed light on this issue in such a way that the final analysis generates new, convincing and interesting knowledge.” And they further assert that “texts chosen for use in a constructivist analysis must be *exemplary* rather than representative.” In interpretive research, iterative–recursive processes are characterized by an abductive logic of reasoning and a focus on contextual meaning (Schwartz-Shea & Yanow 2012), and these processes are consistent with the way discourse theory “reasons backward to establish structure from its empirical manifestations. It asks what the conditions of possibility are of this or that particular discursive production” (Laffey and Weldes 2004: 28).

“interdisciplinarity in the generic sense,” respectively, cf. Fig 1¹². These identities are established relationally, in relation to *something they are not*: Multidisciplinarity is not interdisciplinarity; and “interdisciplinarity in the generic sense” is not disciplinarity. Thus, according to the *logic of difference*, it is the *differential relations* between the discursive moments that are constitutive of their identity (Torfing 1999: 300). At the same time, we see how *the logic of equivalence* creates dichotomisations: Multidisciplinarity is not “interdisciplinarity in the specific sense,” and “interdisciplinarity in the generic sense” is not disciplinarity, respectively. Whereas *the logic of difference* creates identity, *the logic of equivalence* functions by splitting a system of differences and creating a frontier between two opposed camps. This means that meanings are condensed around two antagonistic poles that mutually exclude each other (Howarth 2000). In the examples, opposition is constructed in two different ways:

First, the meanings of multidisciplinarity and ID_specific are articulated to <integration> as the nodal point that serves to partially fix the meanings of the two entities. Opposition is constructed in that for ID_specific, the nodal point has a positive value, whereas for multidisciplinarity, the value is negative. Thus, it is the nodal point that creates and sustains the identity of multidisciplinarity and ID_specific respectively, and they mutually exclude each other. Next, when Bruun et al. (2005) specify that “[r]esearch becomes interdisciplinarity in the generic sense – that is, either multidisciplinarity or interdisciplinarity* ... “ (p. 81), the opposition between multi- and ID_specific is collapsed in that what differentiates the two (plus/minus integration) is subsumed into ID_generic. This is because the operation from specific to generic involves the logic of equivalence, i.e., what multidisciplinarity and interdisciplinarity have in common is accentuated, at the expense of the difference between them. This means that even though multidisciplinarity and ID_specific are both articulated to <integration> as the nodal point that represents their differential character, this difference is now collapsed under the nodal point <interdisciplinary research>.

What they have in common is that they are not disciplinary. According to the *logic of difference*, it is the *differential relations* between the discursive moments that are constitutive of their identity, but the operation of articulating both multidisciplinarity and ID_specific to <interdisciplinary research> logically entails the need for ID_generic to absorb the difference between them and focus on their ‘sameness.’ This is the *logic of equivalence* at play, the logic of simplification, which means, in turn, a “loss of meaning” because their differences are downplayed. This raises the question of what the identity of ID_generic is, other than it is *not* disciplinarity and calls attention to the relation between signifier and signified in that it is the signified that is *emptied* of its differential character, and ‘interdisciplinarity’ is the signifier of both a *specific* signified and a *generic* signified. This identification of the production of emptiness is important for the discussion of hegemonic processes further below.

Insert FIG 1 approximately here

Fig. 1 The integration-premised-discourse

¹² Conventions used in the analysis: The quotes “interdisciplinarity in the specific sense” and “interdisciplinarity in the generic sense” are abbreviated to ID_specific and ID_generic, respectively. When specifically addressing a signifier (i.e., the word, term), the ‘inverted commas’ mark off the signifier that is being discussed, and the <brackets> indicate a concept functioning as a <nodal point> in the analysis.

The Discipline-inclusive-Discourse

Jacobs and Frickel (2009) define ID as “communication and collaboration across academic disciplines” (p. 44). They articulate ‘interdisciplinarity’ to <interdisciplinary research>, but at the same time, they state that they are sceptical about integration (Jacobs & Frickel 2009: 60), and this scepticism suggests that <integration> is not constitutive of the identity of ‘interdisciplinarity.’ However, they do not as such exclude the possibility of integration. Further, Frickel et al. (2016) articulate both ‘disciplinarity’ and ‘interdisciplinarity’ to <interdisciplinary and disciplinary research>. A closer look is needed to identify the nodal point that confers identity to ‘interdisciplinarity’ and ‘interdisciplinary research’:

Frickel et al.’s (2016) scrutiny of underlying assumptions of interdisciplinary research shows that ‘interdisciplinarity’ is articulated to <interdisciplinary knowledge> and generally to <knowledge> as nodal points in the section “Interdisciplinary Knowledge is Better Knowledge” (p. 7). In my reading, ‘interdisciplinarity’ is also implicitly articulated to <disciplinary knowledge> “knowledge that is identified as not interdisciplinary” (p. 7) and “interdisciplinary knowledge and its counterpart “other” (p. 8). Further, Frickel et al. (2016) call into question “the presumed superiority of interdisciplinary knowledge” arguing that interdisciplines and disciplines are “both dynamic knowledge forms whose boundaries and practices are continuously in flux” (Frickel et al. 2016: 8). Therefore, this analysis also considers <disciplinary knowledge> a nodal point which is why in figure 2 below, I have collapsed a nodal point into: <interdisciplinary and disciplinary research> to stress that <disciplinary knowledge> and <interdisciplinary knowledge> are not seen as mutually excluding each other. By articulating ‘interdisciplinarity’ to <interdisciplinary knowledge>, <interdisciplinary knowledge> can be seen as being “elevated” to the same level as <disciplinary knowledge> and thus generally to <knowledge> as the nodal point that confers identity to <interdisciplinary knowledge> and furthermore articulates it to “the current system of scientific knowledge production” (Frickel et al. 2016: 12).

Insert FIG 2 approximately here

Fig. 2 The discipline-inclusive-discourse

Comparing the Nodal Points of the Two Positions on the Fault Lines

In this section, the two analyses above are brought together, and their different positions on the relationship between interdisciplinarity and disciplinarity, and on integration, will be discussed. The nodal points identified in the analyses above serve as the basis for comparison. The analysis of Bruun et al. (2005) has shown, on the one hand, how ID_specific is articulated to the nodal point <integration> and, on the other, how the identity of ID_generic is created by its dichotomization to disciplinarity. Compared to this, we see how the dichotomization between ‘interdisciplinarity’

and disciplinarity¹³ is *disarticulated* by Frickel et al. (2016) when they articulate 'interdisciplinary research' to <disciplinary knowledge> and <knowledge>. However, at the same time, they also articulate 'interdisciplinarity' to <interdisciplinary research> as a nodal point, but since integration is not necessarily included, the meaning of 'interdisciplinary research' we see here, is bound to be different from both ID_specific as well as from ID_gen that gets its identity from being in opposition to disciplinarity in Bruun et al. (2005). This means that the signifiers 'interdisciplinary research' and 'interdisciplinarity' have three different nodal points and hereby three different identities, as summarized in table 1 below.

Insert table 1 approximately here

Table 1 *Identical signifiers - different signifieds*

The signifier 'interdisciplinary research' is identical in the two discourses, but the signifieds are not because they have different nodal points. What the two discourses share are the signifiers, but different signifieds imply different identities for ID. In the *integration-premised-discourse*, 'interdisciplinarity' and 'IDR' are the signifiers of both a *specific* signified and a *generic* signified articulated to <integration> and <≠ disciplinarity>, respectively, and the *generic* signified is empty (as will be discussed below). In comparison, the *discipline-inclusive-discourse* articulates 'interdisciplinary research' to the nodal point <knowledge> via the nodal points <interdisciplinary knowledge> and <disciplinary knowledge> collapsed into <interdisciplinary and disciplinary research>. Following Laclau and Mouffe's definition of articulation (1985:103), the rearticulation implies that the identity of 'interdisciplinary research' is modified, which means that 'interdisciplinary research' in the *discipline-inclusive-discourse* does not coincide with 'interdisciplinary research' in the *integration-premised-discourse*. Thus, if we compare the signifiers 'IDR' or 'interdisciplinary research' in Bruun et al. (2005) and Frickel et al. (2016), respectively, we can ascertain that the identical signifiers 'IDR,' 'interdisciplinary research,' or 'interdisciplinarity' are no indication of identical signifieds. Therefore, the table shows three different nodal points of 'interdisciplinarity' and two different constructions of 'interdisciplinary research' identified in two different discourses; the signifiers are floating between these discourses.

The 'Lay of the Land' of the Field of IDS

In figure 3, figures 1 and 2 are juxtaposed and extended. The *integration-premised-discourse* takes its starting point in <interdisciplinary research> as constituted by the nodal point <integration> that confers identity to 'interdisciplinary research' according to the logic of equivalence, which is a logic of simplification. The *discipline-inclusive-discourse*, on the other hand, articulates 'interdisciplinary research' to <knowledge> in the whole scientific field¹⁴, thus expanding its reach, is not being limited by a taken for granted point of departure in <interdisciplinary research> that is premised on integration, and is therefore not depending on integration for its identity, and it explicitly includes disciplines and disciplinary knowledge. The *discipline-inclusive-discourse* is based on a differential construction of 'interdisciplinary

¹³ This can be explained by the logic of difference which does the opposite of the dichotomization; the logic of difference is a more complex articulation of elements that dissolves existing chains of equivalence and incorporates them into an expanding order (Howarth and Stavrakakis 2000: 10-11).

¹⁴ As what constitutes the scientific field may be subject to negotiation in the concrete cases and may have fluid boundaries, a layer is inserted in the model to differentiate scientific from non-scientific knowledge.

research' according to a logic of expansion. Nor does 'interdisciplinary research' get its identity from being in opposition to disciplinarity; on the contrary, interdisciplinarity and disciplinarity are seen as complementary (cf. Weingart 2000), there is no dichotomization between 'interdisciplinarity' and disciplinarity, and no differentiation between "specific" and "generic."

Insert FIG 3 approximately here

Fig. 3 Fault lines in interdisciplinarity studies: the 'lay of the land'

The figure shows that the positions of the two discourses on the two fault lines are different because the identities for 'interdisciplinarity' and 'interdisciplinary research' are conferred by different nodal points as also shown in table 1. Juxtaposing the different positions on the fault lines, including the visualization, may also suggest a lack of common ground between the two discourses in spite of identical signifiers. Overall, this figure 3 seeks to illustrate the ongoing examination of the two fault lines singled out for analysis, and thus far, it may be considered a map the 'lay of the land' of the field of IDS that will serve as a frame of reference for the following discussion of the two positions.

The Competing Discourses

Challenges of the integration-premised-discourse

Like Bruun et al.'s (2005) definition of 'interdisciplinary research,' the NAS definition (2004)¹⁵, is based on the premise of integration, cf. also Aboelela et al. (2007). The analysis shows how <integration> is the nodal point that confers identity to 'interdisciplinary research' and thus partially fixes its meaning within this specific discourse. This partial fixation is possible because of an antagonism between interdisciplinarity and disciplinarity, which is an exclusion of "a threatening Otherness" (Torfing 1999: 15) that stabilizes the discourse. And at the same time, it illustrates the interdependence of the premise of integration and the 'othering' of disciplinarity. Thus, if for the sake of argument, we assumed that there was consensus in the literature on the NAS definition, 'interdisciplinary research' would not be a floating signifier, its meaning would be fixed, and we would have an unambiguous definition of 'interdisciplinary research.' But as the analysis shows, this is not the case. The *integration-premised-discourse* is challenged on two fronts: one is the competing *discipline-inclusive-discourse* that rearticulates the definition of 'interdisciplinary research' to <disciplinary knowledge> and to <knowledge>. The other challenge is the discourse itself and its premise of integration because it logically needs the 'othering' of disciplinarity. These challenges will be discussed in turn below.

Antagonism - the discourses exclude each other

In the *discipline-inclusive-discourse*, disciplinarity is included by implicitly articulating 'interdisciplinarity' to <interdisciplinary knowledge> and <disciplinary knowledge> collapsed into <interdisciplinary and disciplinary research> emphasizing that <disciplinary knowledge> and <interdisciplinary knowledge> are interdependent. This makes available a space for coexistence between interdisciplinary and disciplinary knowledge articulated to "the current system of scientific knowledge production" (Frickel et al. 2016: 12). Hereby <interdisciplinary knowledge> and

¹⁵ The NAS definition is also referred to as "authoritative" (Klein 2010a, 2010b) which may indicate an epistemic community that shares this definition.

<interdisciplinary and disciplinary research> are stabilized in relation to each other as well as to the scientific field. In comparison, the *integration-premised-discourse* depends on its opposition to disciplinarity and the nodal point <≠ disciplinarity>. Thus, the relation between the two discourses is antagonistic in that logically, the *discipline-inclusive-discourse* and the *integration-premised-discourse* exclude each other. This, in turn, also suggests that the different positions are in a hegemonic struggle over the meanings of the key signifiers, as they both aim to stabilize the meanings of 'interdisciplinarity' and 'interdisciplinary research.' However, as is apparent from the voluminous literature on ID, the two different positions do in fact coexist within the same discursive space - notwithstanding the repeated conclusions that interdisciplinarity and disciplinary specialization are mutually dependent (Weingart 2000; Siedlok & Hibbert 2014). However, what stabilizes the *integration-premised-discourse* is its exclusion of "a threatening Otherness," whereas the *discipline-inclusive-discourse* is stabilized by dissolving the dichotomization in articulating 'interdisciplinary research' to <knowledge> in the whole scientific field. This suggests that it is the *discipline-inclusive-discourse* that will consolidate the field (in its epistemological dimension).

No antagonism - the discipline-inclusive-discourse solves the dilemma of integration

If we look at the fault line of integration, the two discourses do not logically exclude each other in that ID_specific in the *integration-premised-discourse* may be articulated to the nodal point <interdisciplinary and disciplinary research> of the *discipline-inclusive-discourse*. What appears as a difference between them can be reconciled, i.e., there is no antagonism. Although the *discipline-inclusive-discourse* does not consider integration constitutive of interdisciplinarity, it does not rule it out (indicated in box figure 3). Therefore, in the light of a goal to consolidate the field of IDS, it seems that the *discipline-inclusive-discourse* offers a way out of the integration dilemma by dissolving what looks like an antagonism, which is another reason this discourse will consolidate the field. The *integration-premised-discourse*, however, falls short on both fault lines.

Hegemonic Processes - When Epistemological Becomes Political

Beyond the struggle between the two discourses, there are other hegemonic processes related to the 'othering' of disciplinarity in the *integration-premised-discourse*, and ID_generic¹⁶, which is defined by *what it is not* by the nodal point <≠ disciplinarity>, cf. table 1. As appears from the analysis of Bruun et al. (2005), it is the premise of integration that makes ID_generic possible because integration operates as the sameness that unites the different forms of multi- or interdisciplinarity in constructing disciplinarity as "the other." At the same time, however, this sameness - created by the logic of equivalence - implies a loss of meaning which means that 'interdisciplinarity' becomes empty when disciplinarity is excluded. Therefore, it is suggested that it is this loss of meaning - the mere possibility of being empty - that establishes a boundary between the epistemological and political dimensions of the field.

An empty signifier is a signifier without a signified. According to Torfing (2005:301), "[e]mpty signifiers are so over-coded with meanings that they mean everything and nothing at the same time." It should come as no surprise that 'interdisciplinarity' may mean everything and nothing, but as shown in table 1, an analysis of nodal points makes it possible to distinguish the empty from the floating signifier, and thus to identify the source for the production of emptiness, which, importantly, allows us to identify the boundary between the epistemological and political dimension

¹⁶ cf. the dotted lines to the left in figure 3

of the field, as will be further discussed below. Bruun et al. (2005) do address what they call “the double meaning of the concept of interdisciplinarity” (p. 81) but they do not draw out any implications of this “doubleness”; in a discourse theoretical lens this is not “the concept” that has a double meaning but an identical signifier that is used at the same time for both a *specific* signified and a *generic* signified, the latter being empty. As long as this emptiness is not attended to by this discourse, it will continue to create ambiguity as to when ‘interdisciplinarity’ is articulated within the epistemological dimension, and when it is not.

The dotted lines in figure 3 indicate that ID_generic is primarily outside the epistemological dimension - with some attachment, however. It is the empty signifier that opens up a space for articulating *political* discourses, and it is therefore necessary to look for its function in the political dimension. This now allows us to get back to Weingart's (2000) “relabelling” and Frickel et al.'s (2016) question of the “silo rhetoric.” The success of an empty signifier will depend on the action of political forces at play, such as, for example, “opportunism in knowledge production” (Weingart 2000) that may use the empty signifier for “relabelling” and filling it with the relevant content. Thus, emptiness is an important condition of possibility for the signifier to be appropriated for other purposes than epistemological, but appropriation will depend on which nodal points are tied together with the signifier. And one question may be *how empty* is the signifier? Because if relabelling is opportunistic, the label must be assumed to be parasitic, to some degree, on an epistemological signified. The mechanism of the ‘silo’ is a bit different, however, in that the signifier ‘silo’ may be seen as, e.g., to epitomize Campbell's (1969) “ethnocentrism of disciplines” and/or to mirror the pure negativity of the nodal point <≠ disciplinarity> as the name of the “common enemy” of ‘interdisciplinarity.’

Signifiers in the political dimension - and the 'silo' question

Table 2 is an enhancement of table 1 that illustrated three different nodal points of ‘interdisciplinarity’ in two different discourses; it has been shown how *the integration-premised-discourse* and its *generic* signified is the source for the production of emptiness depending on the exclusion of disciplinarity, and how the empty signifier opens up a space for articulating *political* discourses by articulating <≠ disciplinarity>. In table 2, table 1 has been extended with A) the epistemological and political dimensions of the field, and a boundary, and B) a signifier's column to the right illustrating possible signifiers for the nodal point <≠ disciplinarity> which may be articulated either as ‘interdisciplinarity’ (as in ID_generic, cf. table 1) or as ‘silo,’ ‘innovation,’ etc. depending on whether it is the negative or the positive pole of the nodal point that is emphasized. Thus, one possible answer to Frickel et al.'s (2016) question of the “silo” is that the ‘silo’ is so pervasive because it resides in the meaning structure of the field: it is a signifier that articulates <≠ disciplinarity> of *the integration-premised-discourse*. And by articulating this nodal point, the ‘silo’ reifies the dichotomization between interdisciplinarity and disciplinarity¹⁷.

The signifiers indicated in the right column will likely support the continued production of ideological and political forces in the field¹⁸; particularly ‘interdisciplinarity’ as an empty signifier will continue to call into question if we are in the epistemological or political dimension of the field. This interpretation further supports the conclusion that it is the *discipline-inclusive-discourse* that will consolidate the field in its epistemological dimension.

¹⁷ This might be paraphrased: *The more disciplines are considered static, rigid, silos, etc., the more obvious is the need for interdisciplinarity.*

¹⁸ Thus the area of the dotted lines in figure 3, left, may indicate the realm of the ideological.

Insert table 2 approximately here

Table 2 *Epistemological and political dimensions of the field - signifiers and signifieds*

Which forces are at play?

Thus far, the analyses and discussions suggest that it is the *discipline-inclusive-discourse* that will consolidate the field in its epistemological dimension. The shortcomings of the *integration-premised discourse* leave us with an unresolved and muddled relationship between interdisciplinarity and disciplinarity, creating the conditions of possibility for the production of empty signifiers, thus opening a space for articulating *political* discourses, as illustrated in table 2. But the success of an empty signifier depends on the action of political forces. In some situations, the logic of difference predominates, in others, it is the logic of equivalence that prevails (Torfing 2005:14). Thus, 'interdisciplinarity' can, in principle, function as a relatively neutral umbrella concept within the epistemological dimension, such as, for instance, in Aboelela et al.'s (2007) "Typologies of Interdisciplinary Research" (p. 337) in which all varieties of degrees of synthesis are subsumed into a continuum, where the logic of difference serves to highlight the differences in all its varieties, as do the numerous examples of elaborate taxonomies in the literature detailing forms and degrees of integration. Further, the NAS definition of 'interdisciplinary research' does in fact state that integration happens "from two or more disciplines ..." (National Academies 2004: 2).

However, in the construction of emptiness in the *integration-premised discourse*, it is the antagonistic relation that is privileged, and therefore the logic of equivalence comes to predominate over the logic of difference (Glynos & Howarth 2007), which means that the particular differences are cancelled out in the universal name of 'interdisciplinarity' that comes to serve as a common reference point for all that is "dynamic, flexible, liberal, and innovative" (cf. Weingart, 2000: 29). Consequently, integration may make perfect sense within the confines of a research process but is in constant danger of being overflowed by the universal 'interdisciplinarity' reinforcing the polarization of interdisciplinarity and disciplinarity, and therefore, there is a risk that each time the signifiers 'interdisciplinarity' or 'interdisciplinary research' are used, they may reproduce a position that opposes disciplinarity. Tracing the forces that have driven the *integration-premised discourse* to be used and sustained, and not least the ideological 'grip' that it exercises, would present an interesting arena for further research.

Conclusion

The analyses and discussions have suggested that it is the *discipline-inclusive-discourse* that will consolidate the field. However, this discourse is up against the reification of the antagonism between interdisciplinarity and disciplinarity made possible in the *integration-premised-discourse*. This antagonism is likely old news to scholars in the field, but as shown in the analysis, the *integration-premised-discourse* depends on the exclusion of disciplines as "a threatening Otherness" (Torfing 1999: 15) for its identity, and this exclusion compromises the epistemological dimension of the field in that it opens up the political dimension for the production of empty signifiers. The deconstruction of the empty signifier 'silo,' as one example of how the antagonism is articulated, shows how the antagonism is tied with the negation of disciplinarity, reifying the antagonism in the meaning structure of the field. The implication is that although scholars are likely to acknowledge the co-existence of disciplines and interdisciplinarity, it

may be difficult *not* to reproduce <≠ disciplinarity> in the sense that each time the signifiers 'interdisciplinarity' or 'interdisciplinary research' are used or invoked, they may simultaneously carry with them the premise of integration, and thus scholars may inadvertently inscribe themselves in a position that opposes disciplinarity, and thus continue to reinforce the antagonism.

This antagonism is the major source of ambiguity in the field; it inhibits consolidation and needs to be dissolved. For that to happen, the *integration-premised-discourse* would need to loosen its grip on integration as a premise, and as has been shown in the analysis, integration, when confined to the research process, may well coexist with the *discipline-inclusive discourse*, and common ground may be developed from this point of departure. A further suggestion might be to look for alternatives to the signifiers 'integration' and 'interdisciplinarity' in order to curtail the sliding of the signs, which may go unnoticed, from the epistemological to the political dimension.

The antidote to inadvertent reinforcement of the antagonism is reflexivity. This requires a heightened transparency about the epistemological foundations of the field, and an awareness of how our assumptions shape and discursively construct our positions in the field. This paper has provided analytical arguments for developing common ground to consolidate the field and to facilitate a more productive dialogue between opposite positions. Increased transparency may, for example, be achieved by carefully considering the signifier-signified relationship(s), explicitly distinguishing an epistemological signified from a signified that is not, as differentiating analytically between the two dimensions may sensitize us to different logics at play, which, in turn, may be helpful in deconstructing attempts at dichotomizing disciplinarity and interdisciplinarity so that the antagonism can be weakened and we can build common epistemological ground.

The deliberate use of empty signifiers, on the other hand, including the reinforcement of the antagonism, will, in contrast, likely continue to serve purposes beyond the epistemological dimension of the field of IDS. This offers other important avenues for future research in management and science policy arenas. Future research can explore which nodal points are forceful enough to capture floating signifiers originating in the epistemological dimension and further elaborate on the interface between what is epistemological and what is not.

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fig. 1

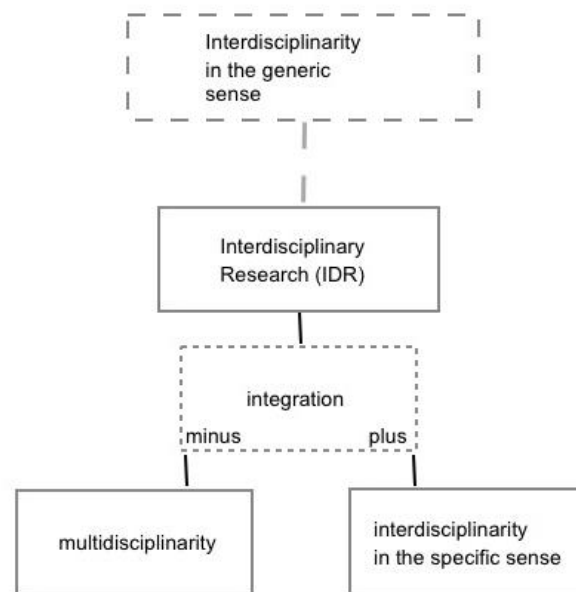


fig. 2

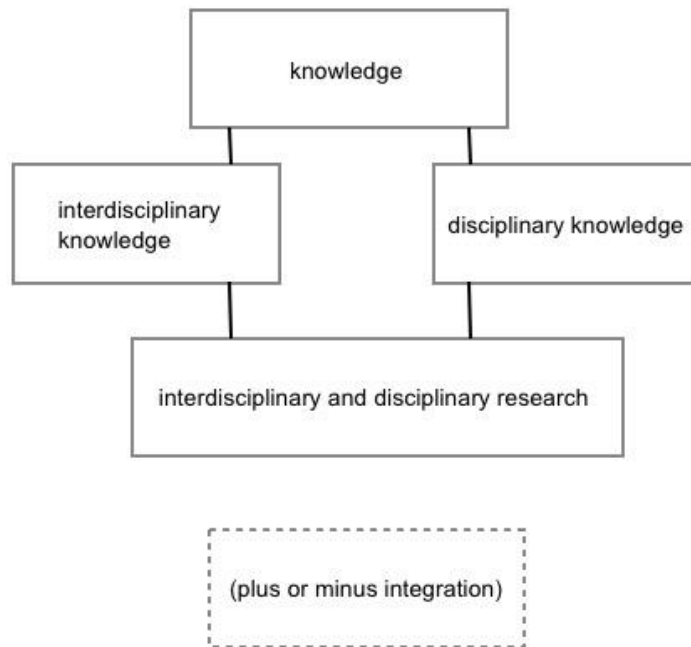


fig. 3

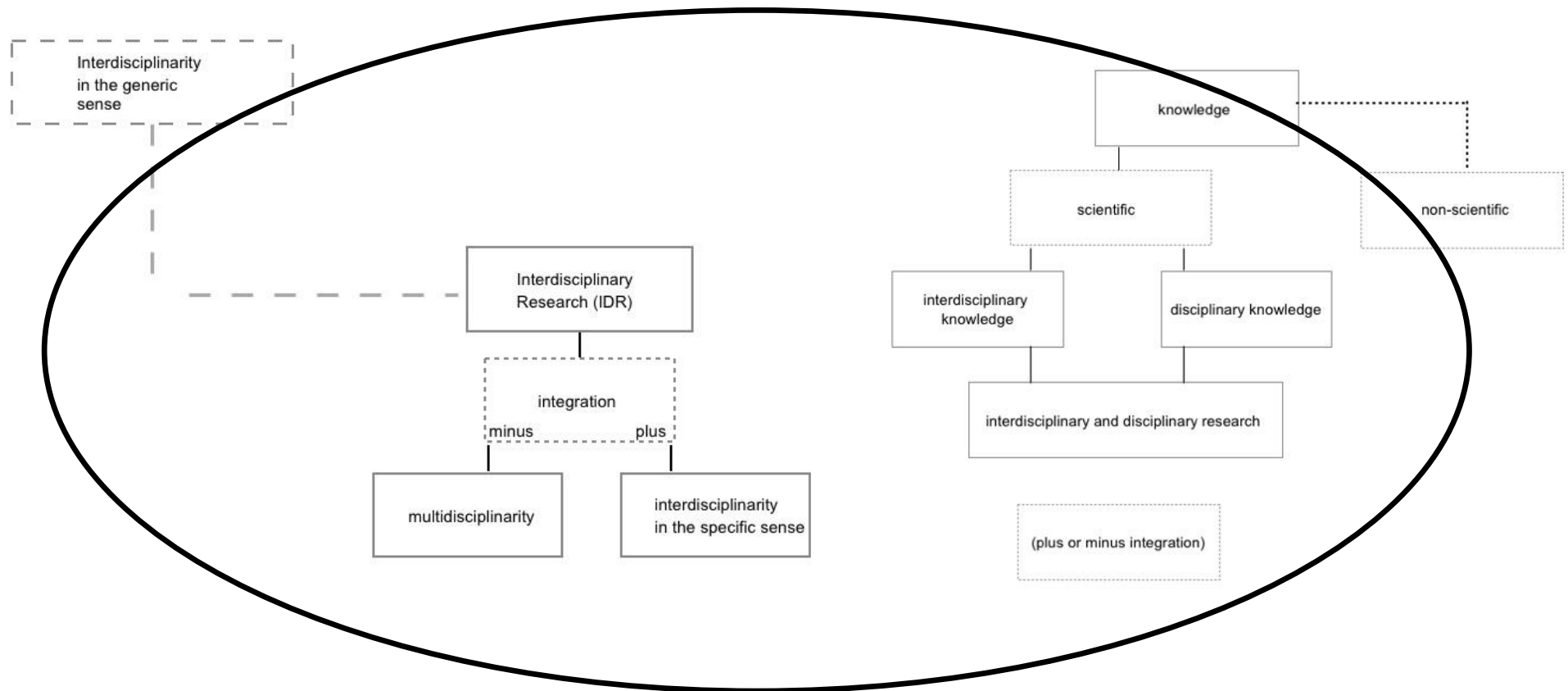
*The integration-premised-discourse**The discipline-inclusive-discourse*

Table 1

table 1

Discourse articulating identity	<i>Discipline-inclusive discourse</i>	<i>Integration-premised-discourse</i>	<i>Integration-premised-discourse</i>
for 'interdisciplinarity' and 'interdisciplinary research'	interdisciplinarity	interdisciplinarity in the specific sense	interdisciplinarity in the generic sense
Identity is conferred by nodal point	<knowledge>	<integration>	<≠ disciplinarity>

Table 2

table 2

	A			
Field of IDS	<i>Epistemological dimension</i>		<i>Political dimension</i>	
Discourse articulating identity	<i>Discipline-inclusive discourse</i>	<i>Integration-premised-discourse</i>		B signifiers
for 'interdisciplinarity' and 'interdisciplinary research'	interdisciplinarity	interdisciplinarity in the specific sense	interdisciplinarity in the generic sense	interdisciplinarity silo innovation etc.
Identity is conferred by nodal point	<knowledge>	<integration>	<≠ disciplinarity>	