Dimensions of diversity: mapping the field of media and communication studies by combining cognitive and material dimensions

Abstract: In this study we empirically map the field of media and communication studies (MCS) by focusing on relationships between cognitive dimensions (such as research topics and approaches) on the one hand and material dimensions (such as funding and institutionalization) on the other. Our analysis, which focuses on the field of MCS in Switzerland, identifies two clusters of research institutions representing distinct strands of research in the field. Results show how these two strands differ in terms of their resource base, institutional positioning and recognition, teaching and transfer activities, as well as activities of scientific production. Similarities and differences on these dimensions serve to explain the general evolution of the field.

Keywords: Research activities in media and communication studies, subject topics, scientific output, organizational structures and resources, meta-discourse on media and communication studies

1 Introduction

Media and communication studies (MCS) is a relatively young and vastly evolving field, characterized by high diversity in theories, methods, and research topics (Altmeppen et al., 2011; Donsbach, 2006; Herbst, 2008; Koivisto and Thomas, 2010). From its very beginning, MCS has evolved beyond and orthogonal to more traditional disciplines such as sociology, economics, political science, or social psychology (Rogers, 1994; Schramm, 1959). Together with its quite rapid growth this has resulted in a field coined by fragmentation and specialization (Corner, 2013; Pfau, 2008).

The matter of fragmentation has inspired controversial meta-discourse on the 'status' of the field (Levy and Gurevitch, 1993; Rogers and Chaffee, 1983). Still today, researchers are presenting arguments for (Hjarvard, 2012) and against (Couldry, 2013) calling MCS a discipline in its own right and some even reject the more modest label of a field (Corner, 2013).

To advance our understanding of the development of MCS—and more specifically its institutionalization, differentiation of topical subfields, and patterns in research activities—meta-discourse needs to apply frameworks that can empirically map the field.

So far, systematizations of the field commonly focus on cognitive patterns such as research topics, applied theories, and methods (c.f. Altmeppen et al., 2013; Donsbach, 2006; Potthoff and Weischenberg, 2014; Schorr, 2003). But in any academic field, the historical development of such cognitive patterns is inherently connected to distinct institutional settings and material conditions: factors such as organizational structure, level and composition of available resources (e.g. related to teaching or research), as well as the interest and demands of specific audiences (including stakeholders form public and private institutions), are linked to the development of the discipline and its different subfields at the topical, theoretical, and methodological level (Becher and Trowler, 2001; Latour and Woolgar, 1979). Thus, a focus on cognitive patterns alone disregards some important factors that strongly shape the development of the field.

The present study aims to advance our understanding of the development of MCS by combining analyses of *cognitive aspects* such as research approaches and topics with analyses based on models from the sociology and economics of science that account for the *material dimensions* of the field. Specifically we address the following research questions:

RQ1: What distinct topical subfields can be identified empirically in the field of MCS?

RQ2: Are there relevant differences between topical subfields in terms of their cognitive and material conditions?

RQ3: Is there evidence that the differences between the topical subfields in terms of their cognitive and material conditions are linked to the historical evolution of the field of MCS?

These questions are approached in the following steps: First, we introduce a framework, which builds on an understanding that the practice of science consists of both cognitive and material dimensions, and that the development of scientific disciplines is the outcome of the interaction between the two. We then demonstrate how this framework can be fitted to empirically map the field of MCS, focusing on subject topics, activities of scientific production, education and transfer activities, resources, and

institutional positioning and recognition. Subsequently, we show how the framework can be operationalized, applying it to the field of MCS in Switzerland, integrating quantitative data with qualitative information on the historical institutionalization of the field. In the results section we demonstrate how the generated data can be used to empirically distinguish topical clusters in MCS, which serve as a basis for a systematic comparison of cognitive and material dimensions in the field. In concluding the paper, we reflect on the empirical applicability of the framework, draw conclusions from the observed patterns for assessing the structure and development of MCS in Switzerland, and derive implications for the field of MCS in general.

2 Towards a conceptual framework for mapping MCS

2.1 Cognitive and material dimensions in the practice of science

We build our analyses on the understanding that the practice of science is determined by cognitive and intellectual dimensions on the one hand, and material and social structures on the other hand, and that the development of scientific domains is the outcome of the interaction between the two. This understanding emerged gradually in the sociology and history of science in the 1960s, breaking with a long-standing epistemological tradition, which focused mainly on intellectual distinctions and abstract characteristics of scientific knowledge: studies demonstrated the historical contingency of scientific knowledge and disciplinary distinctions (Kuhn, 1962) and the importance of the materiality of laboratory practices for the development of science (Latour and Woolgar 1979). The interaction between these dimensions and the parallel struggle for legitimacy and reputation, as well as material resources largely accounts for the continuing development of scientific disciplines and fields (Abbott, 2001). This development is seen as a continuous process of specialization and recombination, where new specialized fields are born while existing ones lose ground or even disappear. While disciplines represent broader and more lasting scientific domains, which are usually recognized in the departmental structure of universities, scientific fields are smaller and more focused domains being subject to more rapid change and recombination. A look to the history of sciences shows that delineation of both disciplines and fields is largely contingent to specific countries and historical periods. Broadly speaking,

we can distinguish two main dimensions, which are required for both the emergence and persistence of any scientific domain:

- The *intellectual dimension* ("academic territory"; Becher and Trowler 2011): the cognitive elements characterizing a scientific domain, such as its underlying theoretical models, the relationships with neighboring disciplines, conventions concerning methods and validity of results, as well as linguistic conventions.
- The *social and material dimension* ("academic tribe"; Becher and Trowler 2011): the social structure of the domain, its broader institutional embedding, e.g., within universities, as well as the material practices in activities such as teaching and research and the associated resources. It also involves linkages with external audiences, which provide resources, such as students, funding agencies, or public and private sector stakeholders.

A common intellectual territory provides members of a domain with a shared identity, distinguishing them from competing domains, and provides the ground for a common research program, which represents a key dimension in the accumulation of scientific expertise. Further, it provides legitimacy towards audiences, which control key resources such as reputation and funding. In turn, to sustain themselves, scientific domains need a material and social basis: resources are required in order to perform research, attract people, and get recognition from key audiences and especially from universities, which institutionalize specialized fields within their organizational structure by establishing research centers and professor positions.

Marketization of science in the last decades has lead to an increased need to sell products and services to external audiences, such as students (for teaching), private companies, and societal stakeholders (for research and transfer activities). These audiences are selective in terms of their needs and affinity to subjects. However, search for resources is necessarily bound to the intellectual territory of a specific domain and not all of the actors have access to the same level of resources—comparing for instance technical disciplines with arts and humanities.

The understanding outlined here implies that both the cognitive and the material dimension influence the development of scientific domains and, in particular, the emergence and competition be-

tween specialized fields and subfields. Specialized fields cannot legitimize themselves, develop activities and acquire resources without an intellectual tradition. The letter is not generated *ex nihilo* but through recombination of pre-existing elements such as the concepts from neighboring disciplines (Abbott, 2001). Such itellectual legitimacy is strongly tied to the resource basis, which has an obvious influence on competition between fields, as those acquiring more resources will be able to attract more researchers and to produce more research results, thereby strengthening their intellectual position.

This general framework is of obvious relevance for the field of MCS characterized by a rich diversity of (competing) traditions and specialized subfields, by strong regional differences in intellectual traditions, and by blurred boundaries with neighboring disciplines.

2.2 Applying the concept of cognitive and material dimensions to MCS

We operationalize the above framework in the case of institutional units in the field of MCS. Institutional units are organized groups of researchers, which are officially recognized by the higher education institution (for example institutes, departments, or chairs), display some level of internal organization and are responsible for managing their own budget (Larédo and Mustar 2000).

Focusing on institutional units rather than on individuals is a sensible choice for different reasons: they have been widely recognized as the main locus of the production of scientific knowledge (Latour and Woolgar, 1979); they are collective entities which typically manage the trade-offs between different activities—including teaching, research, and transfer—and try to address the needs of a diverse set of audiences; they constitute the institutional level on which the interaction between material and cognitive dimensions of research activities is managed (Hackett, 2005).

A comprehensive mapping of these relationships would require an in-depth longitudinal approach, which is beyond the scope of this study and of the data available. In this study, we instead focus on differences across units for a set of relevant dimensions, which can be representative of the cognitive and material components of research. More specifically, we focus on the following five dimensions:

1. *Subject topics*. MCS is characterized by a high level of diversity covering a wide range of subject topics, such as mass mediated or interpersonal communication, journalism

studies, organizational communication, or media reception and effects. Typically, individual units focus on a limited number of subjects and are active within a certain disciplinary research context, which is connected to particular epistemological, theoretical, and methodological approaches. Investigating subject topics therefore is informative of the positioning of the units in the different MCS traditions, as well as of their association with neighboring disciplines and geographical contexts. Further, the central subject topics of the units serves as a basis to empirically distinguish between topical subfields or 'clusters' in MCS (RQ1). For addressing RQ2 and RQ3, these clusters serve to analyze the relationships between the academic subfields, research activities, and cognitive and material conditions.

2. *Education and transfer activities* reveal an important part of the resource basis and the topical audiences of a unit. Furthermore, education—where the workload in MCS tends to be fairly high—represents a central 'trade-off-activity' to the more research-related activities. Depending on the specific research tradition and subfield, as well as the respective differences in audiences and product markets, patterns of education and transfer activities can differ largely within MCS.

3. *Activities of scientific production* are defined as all activities of knowledge production, which are validated and recognized in the research community, as well as activities of participation in this community at the local, national, and international level. This dimension covers a unit's scientific output, research training, and peer-recognition. Scientific output, is not only informative of productivity (quantitative) but—when looking at the type of outlet/medium (e.g., journals vs. books) and language (e.g., national language vs. English language)—shows the relationships within different subfields and geographical traditions (Lauf, 2005; Schönbach and Lauf, 2006).

4. *Resources* constitute a central component of the material basis of units. Analyzing resources and their origin allows seizing the key relationships of units with audiences; specifically those, which allow for their main development and growth. This dimen-

sions focuses on the level and composition of human resources—as these are the central assets for institutional units (Bozeman et al., 2001)—as well as on external funding.

5. *Institutional position and recognition* is central to the units' development as it provides them with legitimacy and access to resources such as professor positions and infrastructure. Further, institutional recognition is relevant towards external audiences and customers, as recognized units will be more likely to establish stable relationships through support and legitimacy of their umbrella organization.

3 Methodology: Measuring cognitive and material dimensions

3.1 Operationalizing diversity dimensions in Swiss MCS

To empirically map MCS in Switzerland we developed indicators based on the discussed framework and the above introduced five dimensions (Figure 1). The following indicators were selected in close cooperation with representatives from the Swiss Association of Communication and Media Research (SACM), who were able to represent the interests of the different units:

1. To account for *subject topics*, interviews were conducted with the heads of the units. Participants were given a comprehensive list of MCS research topics—derived from the agendas of MCS units listed in the so-called "Swiss MCS Atlas" supplied by the SACM and its member institutions (SACM, n.d.), as well as from the common divisions and working groups within the ICA and DGPuK—and asked to indicate their importance to their unit using a three-point scale. To relate information on the subject topics to the cognitive and geographical rooting of the units, we further account for the place (country and university) where the current professors of a unit earned their PhDs.

2. To account for *educational activities* we cover teaching (at the level of bachelor, master, and continuing education) by the number of hours taught and the number of supervised theses. For *transfer activities* we focus on the public and private sector. To assess public sector transfer we look at the transfer of knowledge to the political system, to the non-profit sector, and to public administration by looking at output towards public and non-profit organiza-

tions, i.e., board and commission memberships as well as research reports and presentations for, and funding by these bodies. The conversely defined dimension of private transfer, by implication, includes output (board memberships, research reports, presentations, funding) to organizations based in the private economy.

3. To cover the category of *scientific output* we considered (a) the number of publications (articles, book chapters, monographs, edited books) and (b) conference presentations. We account for the preferences of different forms of publication outlets and the language of publication to tap into the units' embedding and relationships within different subfields and geographical traditions. For *community recognition* we considered keynote speeches, edited special issues, executive board memberships in scholarly associations, advisory board memberships in scholarly journals, and research grants from agencies supporting basic research. Furthermore, to assess activities of *research training*, we cover the training of research personnel focusing on activities related to doctoral education, since most junior researchers are involved in gaining a PhD. The indicators account for volume (number of PhD students, organized PhD courses, and finished PhD theses) as well as quality (publishing activity, conferences, and studies abroad) of the training.

4. To empirically assess the *resource base* of units we focus on size, composition of personnel, as well as the sum of acquired funding. The units' size is measured by their total number of full-time equivalent positions (FTE). Composition of personnel is accounted for by distinguishing between the levels of PhDs, post-docs, and professors, as well as between external and internal personnel. Finally, we assessed the total of external funds acquired from scientific funding agencies and public and/or private institutions in Swiss Francs (CHF).

5. To account for *institutional position and recognition*, forms of institutionalization were looked at from a geographical perspective—to account for the organizational unit's region—as well as from an 'establishment perspective'—to account for the unit's position within the university hierarchy.

3.2 Perimeter, data collection, and data analysis

Unit selection was based on the "Swiss MCS Atlas", which lists all relevant institutions active in the field and links introductory information on topics and structures supplied by the individual institutions (SACM, n.d.). All selected units are officially recognized in the organizational chart of their university. They display varying forms of organization, ranging from single chairs to large university institutes.

The perimeter includes almost all units, which are considered part of MCS in Switzerland. From the 31 identified units, 5 are located at universities of applied sciences and thus not considered as part of the core university sector. Of the remaining 26 units 21 participated in the data collection. This sample provides a good representation of the field: except for the universities of Basel and Geneva[1] all units from the cantonal universities in Bern, Fribourg, Lugano, and St. Gallen, and most units from Neuchâtel and Zurich are included, covering the three large language regions in Switzerland.

Data collection was carried out in the following steps: Interviews were conducted with the respective unit heads on the current and future subject topics and activities of the unit. Additionally, an information sheet was provided by each unit and an online questionnaire was completed by all members of a unit. Lastly, a publication list was prepared based on publication databases and researcher's CVs, which was then verified by each unit member. Most data refer to the year 2009, except for those on publications, awards, and PhD theses, which cover the period 2005–2009.

4 Analyzing the diversity of MCS in Switzerland

4.1 An outline of the cognitive and institutional development of the field

Recent meta-discussion in MCS gives a clear picture of the heterogeneity of the field (Corner, 2013; Couldry, 2013; Donsbach, 2006; Gray and Lotz, 2013; Herbst, 2008; Koivisto and Thomas, 2010). In Switzerland we get a similar picture (Bonfadelli and Bollinger, 1987; c.f. Lepori et al., 2012, 2012, 2011). The various MCS units, which are spread across eight cantonal universities in Basel, Bern, Fri-

[1] Though excluding two universities may seem like a lot for a small field like Switzerland, Geneva actually consists of only one very small unit (1 FTE professor position) and Basel is a special case due to its topical focus on cultural studies. See also the discussion section for more comments on this.

bourg, Geneva, Lugano, Neuchâtel, St. Gallen, and Zurich, follow very different lines of activity rooted in different research traditions. Researchers apply a wide range of approaches inspired, e.g., by sociology, economics, political science, social psychology, or cultural studies. They are embedded in cultural and language contexts, which separate the field between a Swiss-German, a Swiss-French, and a Swiss-Italian region. These have proven to be consequential and visible not only on a cognitive dimension—regarding, e.g., publication output—but also on a material dimension when regarding institutionalization (Lepori and Probst, 2009; Probst and Lepori, 2007): both research approaches and individual careers of researchers are evidently sensitive to these cultural and language boundaries. Hence, the degree of cooperation and cross-fertilization between units rooted in different research and language traditions is also relatively low (Saxer, 2007). Much like in other national contexts (c.f. Koivisto and Thomas, 2010) we see that the current degree of 'disciplinary unity' in Switzerland depends in part on material and institutional pressure: next to the cognitive level of accumulating a common corpus of theories, methods, and research topics, the consolidation of Swiss MCS is driven by the need to establish study programs and acquire research funding.

From a historical perspective, MCS in Switzerland developed first in the early decades of the 20th century at the universities in Zurich, Fribourg, and Bern with a focus on journalism (Probst and Lepori, 2007); a development, which is quite similar to that in the neighboring German-speaking countries (Schade, 2005). By the 1970s these units opened up to broader sociological and political questions of studying communication, especially so in Fribourg and Zurich. Later on, further units emerged that added a cultural studies perspective (Basel) as well as approaches rooted in business studies and economics (St. Gallen). Lastly, the formation of a faculty at the University in Lugano, in 1996, added a focus on interpersonal and organizational communication.

Nowadays, we see topical foci spanning across a wide range of MCS subfields such as mass mediated or interpersonal communication, journalism studies, organizational communication, or media reception and effects, to name a few. The different units which cover these topics are embedded at varying levels within the university hierarchy, spanning from adjunct units which supply specialized teaching in service to units of neighboring disciplines but with no own BA or MA degrees in MCS

(e.g. in St. Gallen), to conventional chair models (e.g. in Zürich), large-scale departments (e.g. in Fribourg), and self-standing faculties (e.g. in Lugano).

4.2 Comparing results across cognitive and material dimensions

Empirical results are presented in three steps. First, a sample outline will provide an overview of the field. Second, we show how the organizational units can be clustered to provide an empirical basis for comparative analyses of different subfields. Third, we compare these clusters in terms of cognitive and material dimensions: when looking at individual indicators, we focus on the sum value as an indicator for the importance of the individual clusters within the overall field, and on the median to indicate the characteristics of units belonging to a respective cluster. Furthermore, focus will be shifted from the cluster level to individual units when it is necessary to further differentiate the analysis due to cluster-internal heterogeneity.

4.2.1 Sample outline

As could be expected based on the narrative outline of Swiss MCS above, the sample shows a high level of heterogeneity (Table I). There is considerable heterogeneity in size, ranging between 1.05 and 18.19 FTE positions per unit. Scientific production and research training display the least diversity, which underscores these dimensions as the two core characteristics of scientific practice in Swiss MCS. Transfer activities towards the public sector are also evident across the whole sample.

The fact that there is still much more variability in activities than in size, suggests that there are also considerable differences between units in terms of activity patterns. Regarding, e.g., undergraduate education, there are individual units with exceedingly high levels of activity (as indicated by the maximum value). The same applies to one of the units in the dimension of public transfer. Looking at activities in further education, as well as transfer activities to the private sector, the median indicates only a small number of active units.

An overview of the distribution of subject topics gives a picture of clear specialization with a 3.5 average of central subject topics per unit. This mirrors the differentiated thematic structure in

Swiss MCS with only a few units working on the same topics, and suggests that various audiences are well served by the field.

4.2.2 Distinguishing between subject clusters

To analyze diversity in MCS a grouping of units is necessary that can be constitutive of the different cognitive fields within the wider domain of MCS. This is done based on the rating of the importance of different subject topics supplied by the unit heads. For the grouping we use hierarchical clustering with Euclidean distance and mean distance between clusters. The dendrogram (Figure 2) illustrates that this allows to identify a select number of units which are quite similar (such as units 14 and 15, or units 5 and 7), while at the highest level of aggregation two clusters can be identified; one consisting of 10, the other of 11 units. The structure of cluster-linkage shows that both vary in internal homogeneity. While the bottom cluster has clear core subjects, the upper cluster comprises units that are more unequal in topical orientation.

4.2.3 Comparing clusters

Subject topics

When the above clustering is applied on the basis of organizational units, we can empirically distinguish between two groups (Figure 3). The first (dotted line) may be referred to as the "classical fields of media and communication research" (CMCR), since this cluster consists of units that are strongly engaged in the more traditional MCS topics, such as "mass communication," "journalism studies," and research on "media audiences, reception, and effects". These common topics are approached mostly on the basis of classical theories of mass media production, distribution, and reception such as agenda setting, framing, two-step-flow of communication, spiral of silence, or uses and gratifications approach. The second group may conversely be seen as comprising those units that evolve around the "emerging fields of media and communication research" (EMCR), which are by comparison more recent within Swiss MCS, as for instance "intercultural communication," "visual communication," or "health communication". These newer research topics are approached based on a wide variety of concepts coming from, e.g., psychology, philosophy, language/rhetoric, business studies, and neuroscience.

When looking at how the different subject topics are covered by the two clusters, we see that next to the cross-field topic of "new technologies and computer-mediated communication," in both groups "research methods," "media and communication history," as well as "organizational communication and PR," are on average, of similar importance. Other subject topics, however, such as "media ethics" and "health communication", are concentrated within a few units. Furthermore, the overall subject field covered by CMCR is fairly cohesive, whereas EMCR shows a subject profile that is more heterogeneous. This is directly linked to the diversity of disciplinary rooting on the basis of which these topics are approached: Whereas CMCR tends to draw on approaches from the well-established neighboring disciplines of MCS, namely sociology, political science, business studies, and psychology (Altmeppen et al., 2013), units in EMCR bring together a heterogeneous set of further disciplines such as pedagogy, neuroscience, linguistics, and anthropology.

Institutional positioning and recognition

Both clusters show different structures of establishment. The CMCR units are spread across all six cantonal universities in the perimeter, however, the majority exist in a German-speaking context. The EMCR units are geographically much more concentrated, with eight of the units situated in Lugano (Swiss-Italian region) and two in St. Gallen (Swiss-German region). Both universities are rather specific cases among the Swiss cantonal universities, with St. Gallen being the only business school in the sample and the University in Lugano being by far the youngest institution.

The geographical and disciplinary rooting of the fields can be further explicated by looking at the location and discipline in which full professors from the two clusters obtained their PhD. In both clusters the rooting of researchers is strongest in Switzerland and the Germanic countries. While in EMCR 11 out of 19 professors received their PhDs from within this region, the CMCR cluster roots even stronger with 22 out of 25 people holding a PhD earned in Switzerland or Germany. In terms of disciplinary rooting both clusters show different degrees of homogeneity. In CMCR, all professors received their PhDs in either communication studies or in one of its neighboring disciplines of sociology, political science, business studies or psychology. In EMCR, there is more heterogeneity with eight

professors who received their academic education in fields outside of this disciplinary circle, such as law, health studies, philosophy, or education.

Historically, both fields show increasing institutional establishment in recent decades, however, with each field following a different dynamic. CMCR gradually upgraded within the structure of the university hierarchy to form large independent departments, mostly due to an increase in the number of students. In EMCR establishment is more spontaneous and pushed rather by demand from industry and public institutions. For these units, initiation with external stakeholders is central and has led to a more specialized topical focus.

Education and transfer activities

Both groups differ clearly on all levels of *educational activities* (Table II). Regarding bachelor programs, the total number of organized teaching hours differs from 3534 in CMCR to 2724 in EMCR. Both fields have one relevant outlier that accounts for roughly twice as much teaching hours when compared to the second active unit in their field. The difference between the clusters is much less distinct when referring only to the level of hours taught by internal staff. This underlines that in CMCR, where the BA teaching load is higher, there is also a higher need to include external lecturers—the proportion of externals exceeds 40%.

We get the opposite picture when shifting the focus to MA education, where EMCR shows higher activity. Similar to the BA level, the cluster with the higher teaching hours is also the one that includes a higher percentage of external lecturers. Also, it appears that activities in MA education are very concentrated in EMCR, with over 50% of teaching covered by only two of the units.

Next to teaching hours, educational activity needs to be substantiated regarding the volume of students. When looking at the number of final theses it shows that CMCR is considerably more active. Even in MA education, where EMCR is more active in terms of teaching hours, CMCR shows a higher sum of supervised theses. In EMCR a remarkable 70% of the units supervised only 4 theses or less. This suggests that both BA and MA courses are considerably larger in CMCR, resulting in a much higher teaching load for this cluster.

When looking at *transfer activities* vis-à-vis public and non-profit organizations (Table III), there appears to be no real difference between the fields in acquired funds. The noticeable difference in mean values, however, indicates that the two fields differ in the way they distribute funds. In fact, in EMCR these resources are highly concentrated: two units account for over 80% of the funds in this cluster. Regarding board and commission memberships, as well as presentations, there again appears to be no considerable difference. When shifting to the category of private sector transfer, it shows that in both fields a large portion of units acquires no private funding whatsoever. In EMCR only three units, and in CMCR four units show output activity towards the private sector. The total of acquired funds, however, is considerably higher in CMCR.

Activities of scientific production

Looking at the differences in activities regarding *scientific output* (Table IV), it should be stressed that the corresponding indicators focus on *volume* and *structure* of science production and allow no inference regarding questions of output quality. When looking at the total number of journal articles, monographs, book chapters, and edited books, the overall activity of CMCR is clearly stronger, with an output that is roughly 60% higher than in EMCR. Specifically, in CMCR close to 50% of the units published more than 70 texts, while in EMCR only one of the units has an output that exceeds this amount. This divergence regarding publication is further emphasized when taking into account the publication language. In the total of English language publications, EMCR shows stronger activity. One explanation might be the different geographical institutionalization clusters, as all but one of the CMCR units are situated in a Swiss-German or at least bilingual context, giving them somewhat stronger ties to scientific discourse led in German—with a substantial number of conferences in Austria, Switzerland, and Germany and other periodic publication opportunities in the German language. In EMCR, 8 out of 10 units are situated at Lugano and thus outside the German language region. For these, English discourse may provide the best opportunity for output.

Divergence between the fields can be demonstrated in more detail when considering the different types of scientific output separately; for instance by looking just at journal publications. While there is no relevant difference in the total of journal publications, a focus on English articles shows

that EMCR is more active. Further, while there is no difference regarding publication of monographs, the clusters vary when it comes to publications in edited books. Book chapters are of obvious centrality in the CMCR field with a median of 33, which accounts for over 50% of its overall publication output. Quite notably, in EMCR this proportion is only about 10%. As expected, the same tendency can be found on the level of edited books.

Further, differences can be observed on the level of *community recognition* (Table V). Keynote speeches suggest higher activity in CMCR. In both groups, however, invited keynote speeches are highly concentrated within particular units. Also, the establishment of unit members in leading bodies of scholarly associations is somewhat stronger in the CMCR cluster. The stronger focus on journal output in EMCR is also manifest on the level of community recognition, both in edited special issues and advisory board memberships at scholarly journals. All in all, it should be noted that regardless of these differences, strong recognition in the community tends to be evident only in a fraction of the units in both clusters.

As a third component of scientific production *research training* is covered (Table VI). In both the number of PhD students, as well as finished PhD theses, CMCR shows higher activity. There is less of a difference when it comes to the actual PhD training delivered within the two fields. In both fields, however, there are some units which do not engage in PhD training at all—namely 3 in CMCR and 4 in EMCR. When looking at the level of quality indicators, there is again no real difference. One particularity should be commented on nonetheless: there is a recognizable difference in the case of publications. Possibly, this is due to the stronger focus on journals in EMCR, which tend to have higher entry barriers due to more standardized review procedures whereas the book chapters, which are a more common way of output in CMCR, tend to have a less standardized review process.

Resources

Differences in unit size and composition of personnel are not strong between the two clusters (Table VII). The sum of total FTE across units is fairly equal and the medians show that differences in personnel composition are limited. When differentiated by level of position, the most common model of units across both fields is: one professor, one or two PhDs, and occasionally a post-doc position. The

only rather distinct difference can be observed on the level of research assistants and PhDs. First, even though there is an additional unit in the CMCR cluster, EMCR has a larger sum of FTE on this level. Second, the median shows that, on average, FTE is by one full position higher in EMCR. At the unit level, 50% of the units in EMCR have between 4.2 and 7.2 FTE PhDs, while in CMCR only one of the units has more than 3.5 FTE on this level.

Looking at the total amount of third party funding, the two fields show slightly different structures (Table VIII). On aggregate level, there is only a marginal difference. However, in EMCR, the median of total funds is quite low, with 63'667 CHF. This is because total funds are extremely concentrated within this cluster: roughly three-quarters of the funding in this field is allocated to only two of the units. Funds acquired from private organizations are more than twice as high within the CMCR cluster and highly concentrated in both clusters. Overall, we see a strong concentration of funding within a few units; especially in the EMCR field. Differences in the composition of funds are particularly related to specific subject topics, more so than to the two general fields of CMCR and EMCR.

5 Conclusion & Discussion

Recent meta-discourse on MCS highlights the thorough diversity of the field. Understandably, there is no consensus on how to characterize and delineate MCS and its subfields as a specific research domain. Attempts to map and structure the field diverge strongly regarding both the international community as well as specific national contexts.

By operationalizing our framework, it was possible to analyze dimensions of diversity in the culturally and linguistically heterogeneous field of MCS in Switzerland, highlighting associations between material and cognitive dimensions, which hint to underlying mechanisms of the overall development in the field.

As a first empirical result, we were able to identify two clusters of institutional units characterized by distinct subject profiles, which, in the Swiss context, we labeled the "classical fields of media and communication research" (CMCR) and the "emerging fields of media and communication research" (EMCR). Geographically, CMCR is evenly spread throughout the whole country, while EMCR is concentrated in two specific universities. The disciplinary institutionalization shows that

CMCR has a prevailing focus on the 'classical' MCS approaches and is generally oriented towards the common neighboring disciplines of sociology, political science, business studies, and psychology. EMCR, in contrast, focuses on a more heterogeneous and less common range of disciplines, which are also more recent to MCS in Switzerland. When looking at individual researchers and their geographical rooting, it shows that both clusters are mostly rooted in Switzerland and the Germanic countries; however, EMCR less so than CMCR. In terms of disciplinary rooting, the focus on individuals revealed that in the CMCR cluster, people received their degrees mostly in the field of communication while in EMCR many researchers come from outside this field.

Starting from these two clusters, the empirical analysis of their resource base, institutional positioning and recognition, teaching and transfer activities, as well as activities of scientific production revealed interesting patterns of similarities and differences which can serve to explain the specific evolution of the field in Switzerland.

CMCR displays a broad orientation towards education while in EMCR these activities are concentrated within a few units and show a clear focus on the MA level. We interpret this as CMCR constituting the core of the basic university education in Swiss MCS. EMCR, by comparison, covers more specialized subjects and consequently some units focus more on MA education, which, in the wake of the Bologna reform, is better suited to specialized areas of study.

Concerning scientific production CMCR has a larger volume of overall output, which is represented in large part by the number in edited books and book chapters. In EMCR these forms are much less common. When looking at journal articles only, on an aggregate level the numbers are similar between the two clusters. A more detailed analysis shows, however, that EMCR has a stronger orientation towards English publications. These differences in language orientation and orientation towards forms of publication hint at distinct publication cultures between the two cognitive fields in Switzerland.

Furthermore, the data displays similarities between the two clusters in terms of the size and structure of human resources, as well the overall funding structure and composition of third-party funds. These similarities can be explained by the similar organization of the universities, academic ca-

reers in Switzerland, and funding of academic units in social sciences in general. We found that, in terms of resources, differences *within* clusters are more relevant, showing that they are generally related to specific research topics rather than broad cognitive fields.

Another important outcome of the analysis is that across many of the cognitive as well as material dimensions, the CMCR cluster tends to be more homogeneous than EMCR. When focusing on third party funding versus teaching activities, for instance, it can be observed that in EMCR the units are split between the more research and third-party oriented, and those more oriented to MA education.

Ultimately, our results hint at important linkages between institutional and material conditions on the one hand and cognitive dimensions of research activity on the other, which are tied to the historical development of the field. CMCR on the one hand consists of rather long-standing units that progressively broadened their activities within a common cognitive matrix and a well-established social reproduction process. EMCR on the other hand consists of much younger units, which emerged in the institutional environment of two specialized universities. In response to specific demands, these universities have imported a set of cognitive models not covered by the existing units in Swiss MCS. The increasingly and rapidly differentiating social demand for communication, both in education and in research, provided new opportunities to the units in the field. The results presented here suggest that the distinct way these opportunities were exploited is linked to the underlying cognitive understanding of the field. Units in the classical domains addressed those opportunities that were compatible with their underlying understanding of the fields, while within the spaces left free by existing units—probably because they were too far from the core topics—new players emerged, borrowing models from other research contexts.

In terms of the general framework, our study provides evidence that an approach which addresses both the cognitive and material dimension of the MCS field can shed further light on its development and serves as an important addition to those studies than manly focus on cognitive aspects when mapping MCS and explaining its evolution.

When looking at the limitations of the study, it is obvious that in the 'empirical mapping' all indicators merely provide proxies for the complex phenomena in question. Furthermore, it should be pointed out again that the perimeter did not include all units in the field. However, all except two universities (Geneva and Basel) participated in the study. Geneva is only a very small unit and the omission of Basel from the sample does not create a bias due to its very different topical focus on cultural studies. It is, however, an interesting question for further research if there may exist a relevant 'cultural studies cluster' within the Swiss MCS field next to the two groups analyzed in this study.

Additional historical data—both nationally and internationally—would provide an opportunity for drawing further conclusions regarding the underlying development mechanisms that lead to the illustrated patterns of research activities in the field. Thus, our research could be extended in two directions: first, by using the applied framework to collect longitudinal data, and second by extending the approach to other countries in order to provide comparative analyses of different cultural contexts. Another step forward could be taken by integrating further data on publication patterns (going beyond the publication type), e.g., by accounting for the field or discipline in which units and their researchers are publishing. This would show whether they are contributing mainly to specific topical divisions within the field, or are contributing to a wider range of communications research, or maybe even going beyond the circle of established communications journals to contribute to other disciplines. As Herbst (2008) suggest, the latter would be a sign of strong maturation of the MCS field. Given the particular cognitive and geographical rooting of researchers, it can also be a sign of the openness of the field from outside in. To gain better knowledge about this, it is important to combine a mapping of MCS with a tracing of the trajectories of the actual researchers that constitute this field. This would give us a better idea on how ideas travel *in* and *out* of MCS, and how this is linked to typical and non-typical types of biographies of researchers.

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Appendix 1: Figures

***Figure 1**: Dimensions and indicators for mapping Swiss MCS*

Dimension	Indicators
Subject topics	Subject categories from SACM, ICA and DGPuK; comparative rating by unit heads
Education and transfer activities	*Educational activities*: For each level (bachelor, master, and continuing education): number of hours organized, number of hours taught, number of supervised theses
	Public and private sector transfer: Board memberships, research reports, presentations, funds
Activities of scientific production	*Scientific output*: number of publications (differentiated by outlet: articles, book chapters, monographs, edited books), language of publication, number of conference presentations
	Community recognition: keynote speeches, edited special issues, executive board memberships in scholarly associations, advisory board memberships in scholarly journals, research grants from agencies supporting basic research
	Research training: Number of PhD students, organized PhD courses, finished PhD theses, number of PhD publications, conferences, and duration of PhD studies abroad
Resources	*Size*: total number of full-time equivalent positions (FTE)
	Composition of personnel: external vs. internal personnel; PhDs, postdocs, professors
	Acquired funding: total of acquired funds in Swiss Francs (CHF)
Institutional position and recognition	Geographic region, professors' place of PhD, hierarchical positioning within the university

***Figure 2**: Related distance clusters of organizational units in Swiss MCS*

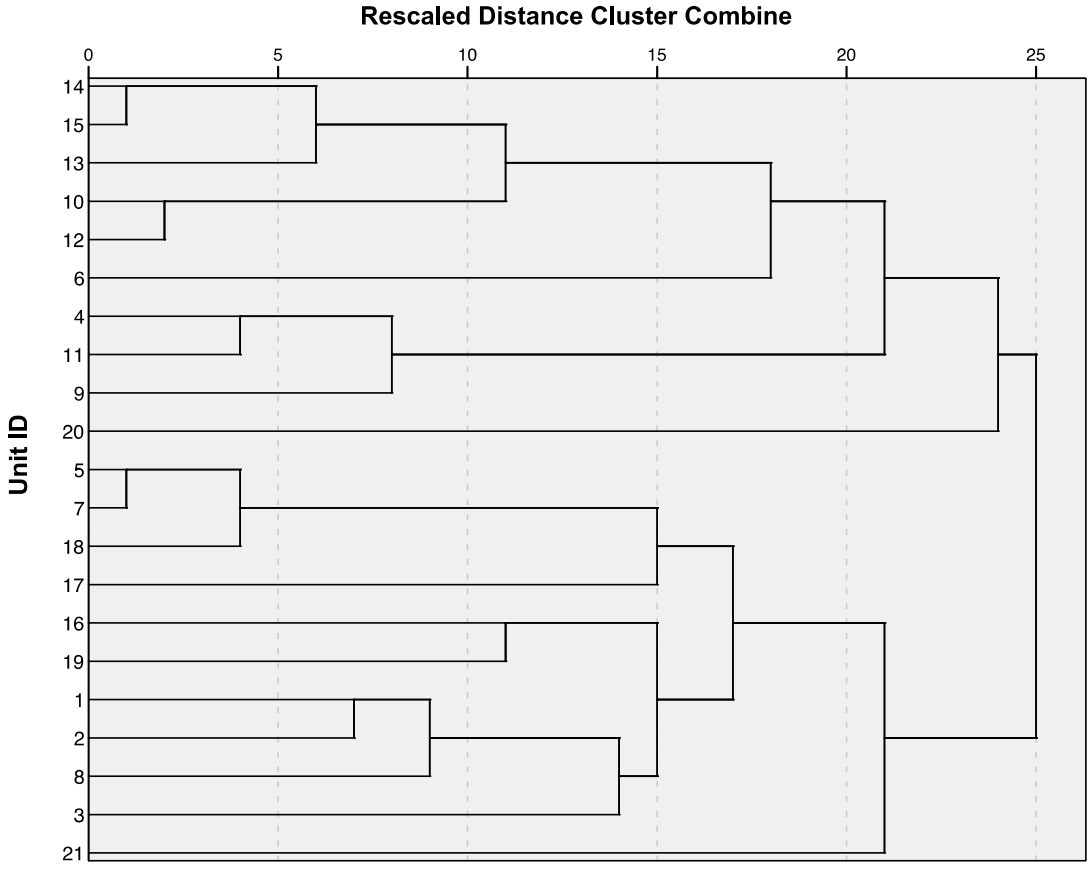
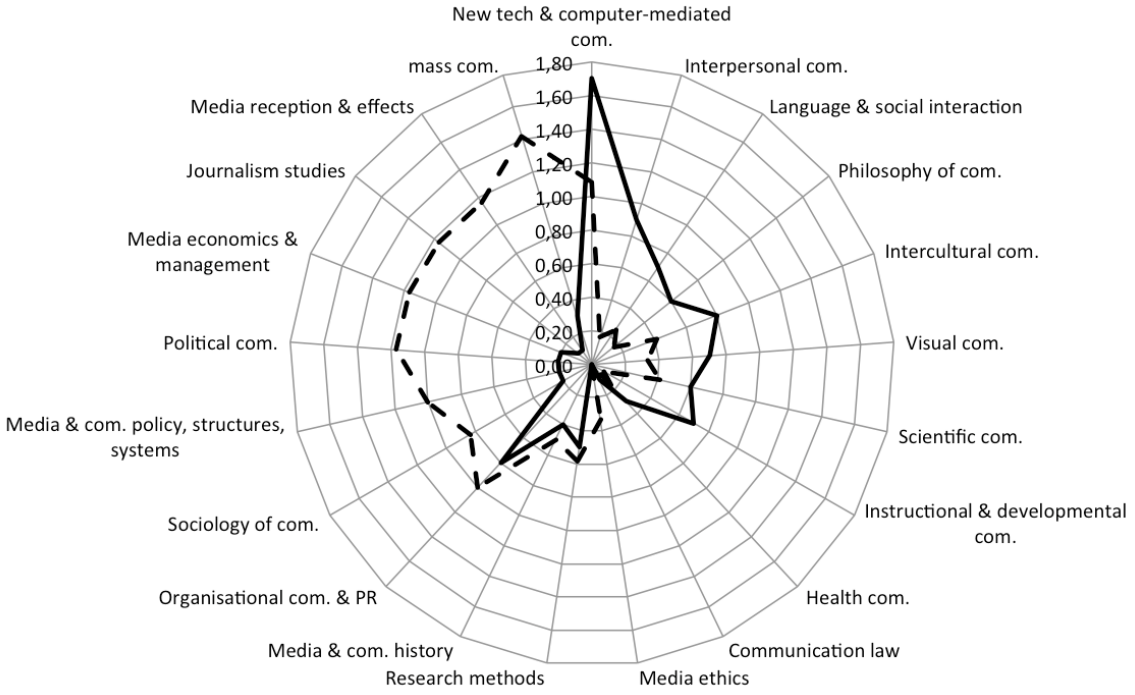


***Figure 3**: Subject profiles of two main groups in Swiss MCS*



Appendix 2: Tables

***Table I**: Summary statistics on the sample*

Dimension/indicator	Average	Median	STDEV	Max.
Size				
Professors (FTE)	1.32	1	0.94	4.33
Total staff (FTE)	6.33	5.48	4.04	18.19
Research training				
Number of PhD theses	3.95	4	2.75	9
Number of PhD students	7.76	8	3.75	15
Educational activities				
Number of BA theses	16	8	24.11	92
Number of hours taught by unit members (BA)	214	164	251.15	1036
Number of hours organized (BA)	298	148	398.18	1540
Number of MA theses	12	10	13.53	47
Number of hours taught by unit members (MA)	223	154	238.16	930
Number of hours organized (MA)	288	196	476.73	1456
Number of theses in further education	1	0	2.33	10
Number of hours taught by unit members (FE)	10	0	23.42	89
Number of hours organized (FE)	70	0	188.25	783
Scientific production				
Funds	112’311	59’463	119’796	318’526
Scientific output / publications	60.48	59	35.70	133
Conference presentations	58	40	55.54	186
Public transfer				
Research funds obtained from public organizations	133’025	59’259	187’996	670’830
Commission and board memberships in public org.	2	1	2.37	9
Research reports for public organizations	7.33	4	8.98	31

Invited presentations for private organizations	3.76	1	4.94	18
Private transfer				
Research funds obtained from private organizations	22’737	0	44’040	146’842
Executive board memberships in private organizations	0.19	0	0.51	2
Research reports for private organizations	1.52	0	3.50	16
Invited presentations for private organizations	1.90	1	2.07	6

***Table II**: Educational activities*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Bachelor courses				
TA organized	3'534	308	2'724	130
TA by internal staff	2'411	196	2'126	156
Master courses				
TA organized	2'248	168	5'906	324
TA by internal staff	1'575	112	3'193	196
Continuing ed.				
TA organized	168	0	1'309	16
TA by internal staff	82	0	217	15
Final theses				
Bachelor	282	14	60	4.5
Master	154	12	102	3
Continuing ed.	0	0	18	0

TA = teaching hours

Table III: *Transfer activities*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Public and non-profit organizations				
Acquired funding (CHF)	1'467'545	80'662	1'325'986	34'549
Board and commission memberships	23	1	19	2
Reports	94	4	60	3.5
Presentations	48	1	31	2
Private organizations				
Acquired funding (CHF)	358'841	0	118'643	0
Board and commission memberships	2	0	2	0
Reports	12	1	20	0
Presentations	26	2.2	14	0.5

***Table IV**: Activities of scientific production*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Total of publications	774	59	480	48
Total of publications (English)	202	14	279	27
Journal articles	264	24	241	23.5
Journal articles (English)	89	6	164	17
Monographs	55	5	40	3.5
Edited books	54	4	17	0.5
Book chapters	401	33	182	11.5
Conference presentations	643	38	548	41.5

***Table V**: Recognition by the scientific community*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Keynote speeches	13	0	5	0
Members of executive boards in scholarly associations	15	1	9	0.5
Edited special issues	9	0	15	0.5
Members of advisory boards at scholarly journals	19	1	32	3
Editors at scholarly journals	11	1	13	0.5
Best paper awards	19	1	14	1.5

***Table VI**: Activities of research training*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Volume				
PhD students	94	8	69	6.5
Hours of PhD training organized	304	18	346	20
Finished PhD theses	57	6	26	3
Quality				
PhD students with at least one conference presentation	42	3	33	2.5
PhD students with at least one publication	38	3	31	1.5
Short stays abroad	7	0	6	1
Long stays abroad	9	1	10	0

***Table VII**: Size of units and composition of personnel*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Total FTE	67.4	5.1	62.3	6.6
Professors				
FTE	14.8	1	13	0.9
Headcount	17	1	16	1
Intermediary level				
FTE	19	1.4	13.8	1.2
Headcount	24	2	21	1
PhD/Assistants				
FTE	33.6	2.9	35.5	3.7
Headcount	58	4	55.0	5.5

***Table VIII**: Third party funding (in CHF)*

Variable	CMCR		EMCR	
	Sum	**Median**	**Sum**	**Median**
Total funds	3'168'530	311'406	2'461'021	63'667
Private organizations	358'842	0	118'643	0
Public and non-profit organizations	1'467'545	80'663	1'325'987	34'549
Funding agencies	1'342'143	77'790	1'016'391	23'671