



Disciplinary cultures and the moral order of studying – A case-study of four Finnish university departments

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Abstract. Based on qualitative data gathered in one Finnish university, the article examines disciplinary cultures of four study fields: computer science, library science and informatics, public administration, and sociology and social psychology. It is suggested that the core of each discipline can be conceptualized as a moral order that defines the basic beliefs, values and norms of the local culture. Following this frame of reference, the analysis of students' accounts demonstrates essential differences regarding how the virtues and vices of studying are understood and what kinds of social identities are constructed in different fields. The implications of the results for the quality assessment and the development of university teaching are discussed.

Keywords: academic tribes, disciplinary culture, identity, moral order, quality of teaching, socialization, study orientation, university studies

Introduction

Research into disciplinary cultures has attracted growing interest in higher education studies in recent years. Viewed from the cultural perspective, the university does not form a one-voiced homogeneous whole but a heterogeneous entity with many different "small worlds" (Clark 1987). Research into the internal life of the university has shown that disciplines differ from each other both cognitively and socially. Disciplines have their own traditions and categories of thought which provide the members of the field with shared concepts of theories, methods, techniques and problems. Besides the common cognitive basis, disciplines have their own social and cultural characteristics: norms, values, modes of interaction, life-style, pedagogical and ethical codes etc. (e.g. Becher 1994; Biglan 1973a, b; Boys et al. 1988; Clark 1986; Huber 1992; Moses 1990; Traweek 1988).

Disciplinary differences have also been emphasized in science studies. For example, Karin Knorr Cetina (1997, p. 260) states that "detailed investigations of different natural sciences reveal different epistemic cultures – different strategies of creating and warranting knowledge." This implies that the sciences understand differently what they mean by experiment and meas-

urement, for instance. Likewise, the concept of truth has different meanings in different fields (Bauer 1990, p. 106).

Tony Becher (1989) has proposed a kind of anthropological framework from which disciplines are viewed as academic tribes inhabiting different academic territories. According to Becher (1987, p. 289), the academic territory differs in two cognitive dimensions: hard-soft and pure-applied (see also Biglan 1973a). In hard pure territory (like physics) knowledge is cumulative and atomistic, aiming at discovering universals and explaining phenomena. The hard applied area (like engineering), by contrast, is pragmatic in nature and its goal is the mastery of physical environment by new products and techniques. Soft pure knowledge (like history) is concerned with particularities and it aims at understanding and interpreting the phenomena. Finally the soft applied field (like education) deals with functional knowledge with the aim of enhancing and improving professional practices with protocols and procedures. It must be stressed, however, that the cognitive fields are ideal types with no straightforward counterpart in the empirical world: there may be significant differences among the disciplines located in the same territory, and the different branches of the single discipline may belong to different territories.

According to Becher, the location in the academic territory forms the basis for the social life of the field: the aims, typical modes of action and interaction, publication patterns, core values and beliefs of the tribe. Following the anthropological framework, Becher stresses that academic tribes have their own traditions with heroes, tabus and rituals, as well as their own ways to control, punish and reward their members. They also have their enemies from whom they want to make a distinction and against whom they defend themselves in academic struggles.

From this kind of anthropological perspective students can be conceptualised as novices of the tribe (see Traweek 1988). Students, like any newcomers, have to get a grip on the local culture in order to gain access in the membership of the social group in question. In other words, students have to be socialized into both the cognitive and social elements of the disciplinary culture in order to be accepted into the tribe. This membership constitutes students' social identity in the academic world. Social identity requires that an individual appropriates the cultural heritage of the social group and that the individual is able to convince the members that s/he has the proper qualifications and commitments (Harré 1983b, p. 274).

From the students' point of view the socialization process gives rise to special problems because the cultural heritage of the discipline consists largely of tacit knowledge that belongs to "the implicit curriculum" (Bergenhengouwen 1987) and is only vaguely recognized by the members of the

field. According to Gerholm (1990), it is of vital importance for students to be socialized into the tacit knowledge because failure in acting according to the taken-for-granted norms and values is taken by teachers to be a sign of cognitive incompetence. The social and cognitive elements are thus interwoven. Therefore, one of the most important tasks for students is to learn to define situations correctly and to use proper discourse in different contexts – for instance, to know what kinds of questions and arguments are valid in official front-stage situations and what are valid in unofficial back-stage situations.

The moral order

I am proposing that the core of the disciplinary culture can be conceptualized as a moral order. The moral order constitutes the main distinctions concerning the vices and virtues of the local culture: what is considered to be good, right, desirable and valued as opposed to what is regarded as bad, wrong, avoidable and despised (Harré 1983, pp. 244–246). The moral order defines the basic beliefs, values, norms and aspirations prevailing in the culture. It forms the background ethos of the group, which determines what is regarded as normal and ordinary, what is regarded as impossible, imaginary and extraordinary, and what is so obvious that it is not even noticed that it is not noticed (Shotter 1994, p. 38). From this perspective, it can be claimed that the socialization of students basically involves a successful commitment to the moral order of the disciplinary culture of the study field.

It is important to note that the moral order has two faces. On the one hand it has normative power over individuals. The moral order is the point of reference from which the behaviour and achievements of the individual are assessed and her or his social identity as a member of the group is determined. If the student fails to adhere to the moral order, her or his social identity as a member of the academic tribe is in jeopardy. In this regard, the moral order represents external control. On the other hand, the moral order provides resources for the individual. It is a kind of compass by the help of which the individual can orient in the world and gain some solid hold in it. Without commitment to some moral order the individual is lost, drifting in an identity crisis (e.g. Greenwood 1994; Taylor 1992). This also applies to the students. Only by committing to the moral order of her or his discipline can the student construct a social identity as a representative of her or his field and find a point of reference to orient in the diversifield academic world.

The research

In this article I examine disciplines as moral communities by using the anthropological framework proposed by Becher. The empirical analysis concerns four different disciplinary cultures in one Finnish university, the University of Tampere. The focus is on the student perspective. I am asking into what kinds of moral orders students of different fields are socialized during their studies in university.

The rationale behind the analysis is that the moral order constitutes the basis for students' experiences of studying: what they are aiming at and what they are avoiding in university; what they consider to be crucial and valuable and what they regard as unimportant and of no value; what they expect from teachers and courses; and how they assess the quality of teaching and learning. In this manner, the study aims to improve our understanding of the internal functioning of the academic world and the various meanings university studying has among different fields. This kind of internal perspective into the basic unit level (see Becher and Kogan 1992) of higher education system is of crucial importance when we try to develop academic practices, improve university teaching and learning and guarantee the quality of higher education in general.

The study fields included in the investigation are sociology and social psychology (which belong to the same department at the University of Tampere), computer science, public administration and library and information science. The disciplines differ with respect to their location in the academic territory. The cognitive boundaries of the academic territory are, of course, not fixed nor categorical, since there may be both pure and applied as well as both hard and soft trends in the same discipline. However, on the basis of the discipline's core, it can be said that sociology and social psychology represent the soft-pure area, whereas computer science can be placed in the hard-applied area and public administration in the soft-applied domain of the academic landscape. The case of library and information science is more complex, since due to its internal differentiation its position varies considerably along the soft-hard dimension, but in any case it represents the applied territory. No hard-pure discipline is involved in the study, the reason being simply that in the University of Tampere, where the study has been conducted, there is no faculty of science.

The research is based on a series of qualitative studies that have been carried out in the project aiming to improve teaching and learning in the University of Tampere. The project has been conducted in a dialogue with the students and the staff as there have been feedback sessions and discussions regarding the results in each of the four departments. The data consists of focused interviews and stories gathered by the non-active-role-playing

method (Eskola et al. 1988, pp. 239–308). The interview data was collected in two phases. In the first phase the themes of the interviews covered students' overall experiences and conceptions regarding their study field, in a second phase students' experiences of thesis writing were dealt with. The total number of interviews is 93, distributed fairly evenly among the four study fields. Besides the interviews, students wrote short essays on the basis of the framestory in accordance with the non-active-role-playing method. The stories describe first how the students account for the popularity and unpopularity of their study field and secondly, how they define the quality of teaching. The number of the first kinds of stories is 100, and of the second kinds of stories 124.

Most of the data was gathered from undergraduate students in the middle of their studies, typically from third year students. However, with regard to experiences of thesis writing, students working with their masters' thesis or who had just graduated participated in the interviews. Students who were asked to join the interviews were selected randomly from the official student register, whereas students who took part to the non-active-role-playing were approached through lectures or seminars where they were requested to write stories about university studies.

In the following I shall examine the four disciplinary cultures as seen from the students' point of view by analysing what constitutes their basic distinctions with regard to virtues and vices, that is, their moral order. Following the methodological approach of cultural distinctions (Alasuutari 1995), the analysis aims to discern what kinds of distinctions the students themselves make while speaking and writing about their discipline and about studying in university. The focus of this kind of cultural analysis is on values, norms and core beliefs collectively shared by all students irrespective of their study phase, gender, social background or other personal characteristics. The analysis is based on the data as a whole but the quotations in the text are from the interviews, because in interview data the students' voice is heard in its richest mode.

The results

The sociology and social psychology tribe

The moral order of the sociology and social psychology tribe is based on the virtue of academic, non-professional education. Following the traditional Humboldtian view of university, the moral order stresses the importance of internal motivation for studies, theoretical work, critical thinking and intellectual growth. True studying must not be a means to external ends like a

well-paid job but an end in itself: "I think that during my study time I want to develop myself. [...] If I'll go to working life, then I will no longer have time to reflect what importance all this has, what are the foundations of my thinking or my philosophical ideas, what is my view of life. But now I have time to search for these foundations." Correspondingly, professional orientation and careerism are opposed: "I was interested in more theoretical things than some social policy. I mean my aim was not to study for some practical profession. In particular I wanted some wider theoretical foundation." Moreover, the virtue of non-professional education is defended in the face of external pressures, as in the following case: "It is of course a very usual and reiterated question on the part of close and less close acquaintances that what you will become, what you will be. And people want a ready answer, which they can locate in their own world. But there is no such answer, you can't say that about sociology. Usually I say that I can become whatever. It is not difficult in my world, I don't need any one label under which I could fit myself."

This kind of true studying presupposes total and profound dedication to studies: "People prefer to work on their paper a whole year, they like to do it properly and everything else may be delayed because of it. It must be done well, because you are interested in it and it gives an opportunity to develop your own thoughts." Likewise, it is extremely reprehensible to try to proceed quickly from one achievement to another and to collect study credits where it is easiest. On the contrary, virtuous studying requires time and effort and it must not be subordinated to claims for effectiveness advocated by authorities in higher education, who emphasize that the master's degree should be completed in about four years. According to the moral order, the membership of the tribe is so demanding that it requires years and years of devotion: "I have to understand what is said, so that I can develop my thinking. This is the aim, at least that is what I think. Then some four years, it's somehow a totally crazy idea. To understand things in four years. I think that you can't learn them even in forty years." Thus the official claim to shorten the duration of studies turns upside down: "Of course you could study even more slowly. Not faster."

The path to the membership of the sociology and social psychology tribe is even more demanding since it is an individual and lonely route. The disciplinary culture emphasises the value of intellectual independence, academic freedom and individual heroism as opposed to the vices of following a model, studying safely under a teacher's guidance in line with other students: "There is no one to give me a ready made model. In a way I really jump with my project into unknown and in that sense I like it enormously." Opposition to training can grow even to the extent that students do not want to define

themselves as learners at all: "I get a disgusting feeling from learning. It reminds me of adaption of some thing ready made." Since everyone should have an individual project that is developed throughout the study time – or even one's whole lifetime – there can be little co-operation or common objectives in studying. This implies that students have to make their own personal curriculum: "It can be so different what you want from sociology, that's why the final outcome can be so varied. In some professional field you really can set some objectives, but in sociology you can't do that."

The demand for individuality and originality concerns not only studying but the whole life-style. According to the moral order, it is virtuous to be different and alternative. A true novice of the tribe should make a distinction in overall appearance – in dress, habits, hairstyle etc. – from the mass of ordinary students: "I have a feeling that the people in social policy are more ordinary in their dress, I mean you can't distinguish them from the mass, but in social psychology you can find some difference." Besides, students must have "more initiative than in some other disciplines. We have a true interest in studying and in the topic being discussed. And maybe we are more critical than others." In contrast to the uncritical attitude of the ordinary students, the sociology and social psychology students point out the value of criticism in all their activities, even in the following extreme form: "Somehow I am so full of criticism that soon I shall not be able to do anything because I'm so critical."

In spite of the theoretical emphasis, isolation in an ivory tower is defined as a vice in the disciplinary culture. Instead, the moral order stresses the virtue of improving the world. This shared goal includes societal activity, emancipation, resistance and radicalism: "If we speak about some revolution or about anarchy, it starts from sociology because sociology deals with things so critically. When it discloses matters, it may help people so that they don't accept everything. Not to accept everything but to understand that it is possible to oppose, that everything is not self-evident." Accordingly, the students believe in the power of their discipline: "In my opinion sociology has an awful lot of potential if we speak about the current situation in the world, so I think sociological knowledge is extremely important." This is because "sociology gives a means to understand this world, especially now when everything is so confused. It gives a means to comprehend where we are going."

In the project to improve the world it is right to make an alliance with all the marginal people, the oppressed and the underprivileged, such as "the disabled", "the prisoners" and "for example, refugees, immigrants, all minorities and in general what will happen when foreign workers come here and so on and so on." By contrast, it is wrong to use sociological and social psychological knowledge as an instrument of manipulation against these people. The

tribe must resist the temptation of power and work in order to make a better and more just world. In this respect there are severe threats and the tribe has to be very watchful: "Of course sociological knowledge can be used, but I'm afraid that at the moment it is used, even though one has got away from Taylorism and that sort of thing, but nevertheless it is widely used in such a way that it becomes an instrument for manipulation and power."

Lastly the moral order stresses the value of common, open, enthusiastic and lively discussion. Having discussion is the mode by which the tribe practices its virtues: engages in theoretical thinking, changes the world and defends the oppressed. The ideal picture of studying is "a student who is sitting with a professor in a café and changing the world." Likewise it is stressed that "we could study together, I mean specially together. Together get into sociological literature and reflect upon what sociology is. This would be an ideal situation." It is vital that the discussion provide emotional warmth and solidarity in the otherwise lonely studying process: "People come together, people who are interested in sociology, in a sense it's like a cross-roads where you can find tremendously lovely people." Similarly, a lack of open discussion is among the vices since without it the students are left on their own striving with their individual study projects towards membership of the tribe.

In summary, the moral order of the sociology and social psychology tribe follows Humboldtian ideals by emphasizing academic orientation and dedication to the discipline as the main pillars of the social identity of the novices: "I'm all the time more and more, to a greater extent a sociologist. My fascination with my discipline or my study field is constantly increasing."

The public administration tribe

The moral order of the public administration tribe is almost the exact opposite of the moral order of the sociology and social psychology tribe. The foundation of the moral order lies in the relationship between the discipline and the labour market. It is virtuous if this relationship functions well and the tribe provides its novices with a smooth path to good employment as civil servants. The rationale of true studying in public administration is that the degree one gets from the university can be exchanged on the labour market for as good an occupation as possible. Thus the moral order emphasizes the exchange value of studying. It follows that the disciplinary culture is degree-oriented: "Already the choice of the subject was such that I just wanted to have some academic degree. So I'm determined to go through this although it does not always interest me." And achieving a degree is important because it enables admission to working life: "I have got a picture from work prac-

tice that people don't think that it makes you very clever or anything if you have a degree. It means only that then you can apply for jobs." From this perspective it would be totally irrational and a waste of time to study many years without getting professional qualifications and some guarantee of future job opportunities. Conversely the biggest threat is unemployment after graduation.

From this professional orientation, the moral order of the public administration tribe stresses the virtue of rapid graduation. Instead of profound dedication to studies, getting the degree done as soon as possible is what is appreciated. The maxim is: "Quickly out of here and get the degree finished." Thus the moral order of the public administration tribe corresponds perfectly to the demands to shorten the duration of studies as required by the authorities: "I have proceeded in the time limits set by the Ministry of Education, in four years I should finish my studies."

Although the disciplinary culture is strongly degree-oriented, it does pay some attention to the content of studies, too: practical knowledge is appreciated and theoretical knowledge despised. According to the moral order, teaching should give "a picture of working life and its problems and solutions, the burning questions of the day." It is valued that the tribe should be constantly alert as to what is happening in practice and should react as soon as possible – in any case sooner than its academic competitors – to the rapidly changing needs of society in order to guarantee students' future job opportunities. The emphasis on practice is also manifested in critical comments on university teaching: "It gives general views and knowledge about all these matters, about the functioning of the state or municipalities or in general about public administration. But when you go to some workplace it is a totally different thing. You have to start everything from the beginning there, totally. I mean you don't go into all sorts of basics and things like that there. Working in practice is really a different thing from the theory what they teach here." It follows that there is nothing reprehensible in avoiding theories and scientific thinking: "As a matter of fact I don't consider it to be science, perhaps I don't even experience it like that. I see it as public administration, as something through which I can really see how this system operates, how administration functions or does not function in the public sector. I can't mix science in it." Another student expresses the same attitude in the following way: "I think that our degree, at least so I have figured it out, is not immensely scientific. And I think that if a student has studied four or five years, I don't know, there are surely exceptions, but if I think of myself, I don't believe I have become much more scientific here compared to what I was before."

In accordance with the professional orientation, the moral order stresses the importance of status and prestige. The public image of the tribe gives rise

to concern: "Nobody knows this, it is awfully little known among outsiders. Those who work in public administration, they know about this field but others, I feel that they do not appreciate it properly. I would like to be a part in a rather more appreciated thing." Correspondingly, in contrast to the sociology and social psychology students, public administration students regard the vague job opportunities as a severe problem: "It is so clear to think that if you study education you will be a teacher and everyone knows what a teacher does, or if you study medicine then you will be a doctor, but public administration is a little bit obscure, who is such a person, what does he or she do. There should be more information about it." This insecurity can even cause embarrassment and shame: "I think I'm ashamed of even telling anybody what I have studied. I feel that the response is like, oh really, you are not going to apply for jobs or what." On this basis it is considered absolutely crucial to market the discipline to employers and to try to enhance the image and status of the tribe: "You should market the degree in administration so that other people would know about it. I suppose you yourself tell every body about it all the time." The marketing of the degree is especially important since the tribe has to compete on the labour market with members of very powerful neighbouring tribes like lawyers and economists: The more the public administration tribe can enhance its status, the better chances there are for the students to get good jobs.

The moral order also makes a distinction between ordinariness and originality. In contrast to the sociology and social psychology tribe, being as normal and ordinary as possible is esteemed: "an average person", "commonplace type", "middle course wanderer" "not any great personality". A true novice of the tribe should not be "a representative of any extreme movement, for example not extreme right nor left, and on the other hand I don't know any public administration student who'd be a member of the extreme green movement." In other words, a student of public administration should be "neither a hippie nor some sort of snob but in between these extremes." The virtue of being ordinary is accorded even more prominence since the public administration tribe is seen to act on behalf of other ordinary people and to represent the public interest: "We surely form a rather grey mass, but I think it is very appropriate as we go to the public sector." Because civil servants "take charge of the public affairs of all people", they have to serve ordinary taxpayers like themselves and avoid promoting any special interests of any special groups.

In promoting the public good, the disciplinary culture stresses the virtue of advocating reforms and development. Against the resistance to change prevailing in the system, the tribe has to act as an agent of change: "In general I think that the big bosses in civil service are extremely afraid of

facing anything new since they fear they will lose their own positions, so they are not able to respond to the challenges society poses for them. At least I think that here they try to make us totally the opposite, so that we would not be afraid of facing all kinds of challenges and that we could respond to them, I mean the organizational culture, breaking down the current culture.” This means that the tribe must be alert and ready to make reforms when needed “in order to manage administration better than at the moment so that it would be more effective, more rapid and still more direct and in a way more justified, too.” Correspondingly, the novices of the tribe see themselves in a role of a herald of change: “The cuts in the public sector are of course not pleasant, but I still believe that we will get jobs, there is room for us. In general there are so many civil servants that you can make some cuts. I mean it’s awful, but there is a lot of inefficiency. In principle I see this picture quite positively, because we are taught precisely so that we are able to adapt to changes, the thing that those in the field at the moment can’t do, when some new thing is incorporated into that civil service culture.” This offers influence and authority to the field, which is highly valued: “Personally I do feel that I’m able to influence matters. And in general I feel that civil servants have quite a lot of influence upon matters and decisions and everything else. I’m extremely satisfied with it, since I want to influence matters and I feel that I can do it.”

In summary, the disciplinary culture of public administration is degree-oriented, aiming at good positions in working life. Therefore university studying in itself and the study field as an academic tribe do not get a prominent place in novices’ social identity projects: “I think it’s only a so-called technical matter or a paper so that you have a chance to apply for some jobs, for instance. In this way I don’t consider it as such a big matter.”

The computer science tribe

Like the moral order of the public administration tribe, the moral order of the computer science tribe has its roots in professional orientation: True studying has a high exchange value on the labour market. In contrast to public administration, however, the novices of the computer science tribe do not aim at the labour market in general terms but at specific, well-paid jobs in private firms. The reputation of the field as an exceptionally good path to employment forms the core of the disciplinary culture: “It is a field where you can find employment. Indeed many have thought that okay, this is certainly a field where I could be good and where I certainly can get a good job.” Consequently, the basic rationale of studying lies in getting a high-salary job

and making money: "One motivating factor at least is good job opportunities, salary."

In order to get a well-paid job students have to acquire expertise in computing. Therefore the moral order emphasizes hard expertise and work-related qualifications as against mere performance and rapid accumulation of study credits: "Nevertheless it is the case that we are taught such things that afterwards we must be able to do something, I mean there is nothing general but real knowhow, how to do things." Success in working life requires that the novices "get qualifications to work in business life" and therefore mere performance is not enough. It follows that the moral order is not degree-oriented as in public administration, since the degree in itself does not guarantee anything – the only thing that matters is what you can do. Besides, it is not even necessary to get the degree finished, as it is possible to get a good job without it if you only know the subject matter.

From the professional point of view, the moral order also stresses the virtues of usefulness and learning by doing. Only those courses are regarded as good and valued that have direct usefulness by providing practical training for hard expertise: "You learn only by doing. You learn best by doing things yourself." As a norm, these courses involve exercises with computers: "If a course places great demands, for instance programming and that sort of things, then I will attend them since it clarifies a lot when you attend them." Instead, theoretical book-reading is considered as bad and avoidable, since it has no concrete usefulness: "Then we have exercises in some courses which you can manage only by reading or otherwise, I mean they are not very difficult. They only require that you take the trouble to do a bit of work, so they don't have practical usefulness." Consequently by emphasizing the ethos of doing, the disciplinary culture maintains a distance from science and academic pursuits: "I haven't ever really thought about it, I mean what science is. It is rather a strange concept to me." Another student makes a similar remark saying that, "These kinds of things do not really arise, not for students. They probably will not even notice that, I mean, doing research."

The moral order also makes a distinction between the business world and the academic world and if they come into conflict, the moral order takes the business world as its point of reference. The disciplinary culture follows the principle that what is good for computer firms is good for students, too, since it is these firms that hire computer experts: "When these programming languages are taught there should perhaps be more such languages that are used in the business world, more some general operating systems should be taught, those which are used more in the business world than in the academic world." Likewise, keeping close contacts with the firms and

listening carefully their wishes is valued: "In our excursions to firms they have recommended us also to study accountancy. I think it is really useful for us." On the other hand, ignoring the needs and wishes of companies in teaching is highly reprehensible: "In my opinion there is a need to improve the relationship with the firms", because "when compared to the needs of working life they have not taught us all that they should." Accordingly, "One negative feature at this department is that there are no relations to the firms. There has not been enough co-operation. [...] For example, there could be some joint projects and all sorts of contacts, also informal."

Although the disciplinary culture of the computer science tribe is basically instrumentally oriented there is also room for a specific kind of internal motivation. Namely, attraction to computers is regarded as a value in itself: "Most of those whom I have met are some kind of computer lunatic boys or men. They have just in a way gone mad, in which phase I don't know, before or during their studies, but anyhow almost everybody is in some way a little bit crazy about those computers, myself like everybody else. Some kind of a strange love-hate relationship with those machines." Thus, working with a computer should not be only an instrument of making money, but the novice should also be intrinsically interested in computers: "For some reason I was just fascinated by computers, although I probably had never even seen any such a gadget. It hasn't changed ever since, it just fascinated me. I didn't know anything at all about computers before I came to university. It was totally new for me, but somehow it was so very interesting. And it still is interesting." Accordingly, it is virtuous to spend time with computers and at the same time meet other novices and sometimes also teachers: "I go there for fun. I go to sit at a work-station and play there or read or do whatever." However, it is crucial to maintain a distinction from computer addiction: "Those who spend most of their time with computers, who work with the computer even at night in their own rooms so that they really can't leave it alone, who have nothing else in their minds, those people are not computer science students." Thus, the moral order stresses that although interest in computers is esteemed, it is still more esteemed to aim at success in working life.

Finally, progress and dynamism are among the vital virtues among the computer science tribe. It is valuable to be a part of a large and rapid technological triumph as information technology spreads to every sector of society and constantly finds new applications: "It's very difficult to think what will happen in the future since technology is developing really fast. What it will bring in the future, it will be totally different then." In this way constant progress is considered an essential feature of the computer science tribe: "In our field there is always something new, new areas are emerging on which more knowledge is needed." Correspondingly, the students are very confident

of the future of their field: "Information flows, which are coming to firms, are increasing all the time and information in different forms is coming from everywhere. There will surely be enough it for us to manage." On the basis of this conviction, the tribe is seen as some kind of master of the future with great responsibility, since it has "impacts on many sectors, even decisive impacts", as in the following quotation: "Even a little error in a computer programme can cause almost anything. For instance, satellites have been lost due to only a little mistake. Of course it requires responsibility of us." Conversely, it is considered as avoidable and reprehensible if the progress slows down and the tribe loses the excitement of speed and constant growth.

In summary, the disciplinary culture of the computer science tribe is professionally oriented, emphasizing the virtue of hard expertise wanted by computer firms in business life. Accordingly, the formation of novices' social identity in the university is only very loosely related to the academic world: "My aim is to learn to know the field well and of course then some good job."

The library and information science tribe

As in public administration and in computer science, the moral order of the library and information science tribe follows the professional logic. The rationale of studies lies in the future working life. The speciality of the field is that it has a long subacademic tradition of training students for a precisely defined job, librarianship in public libraries. Although the tribe has managed to acquire academic status, the moral order of the discipline still stresses practical and vocational orientation and the virtue of specific work-related skills: "One reason why I chose information studies was that it prepares you directly for an occupation. For instance, in political science there is no such thing. The occupation of a librarian, that's my aim." Accordingly, general education is defined as a vice, since despite interesting content it does not offer a clear vocational aim.

Following the professional logic, the moral order stresses the importance of practice. The education should be carefully geared to the actual requirements of working life. Everything that is not necessary for work is defined as overeducation and it should be omitted from the curriculum: "The education is somehow overdone with regard to the job. 79% of the graduates go to public libraries, but all the time they only talk about scientific libraries or information services to which 1% will go. Actually they don't talk about public libraries at all." Likewise, another student emphasizes that "Of course if you are a librarian in some university library it is good then that you know about how to do scientific research. But I don't know if you are in a public library, then you don't necessarily have to know anything about scientific research."

According to the moral order, it is even right to oppose the academic drift that has raised their tribe to university level: "I don't think the prestige of the field could be improved by moving the training to university level. The prestige doesn't improve by making the education more important and more demanding." Another student expresses the same opinion in the following way: "It annoys me that everybody can do that work and I have to educate myself for five years. Well, there are some jobs, for instance superior duties or some planning duties, for which this education can offer something, but at the counter a shopassistant would do as well." It follows that the discipline as an academic tribe does not resonate to the experiences of the novices: "I haven't thought about library science as science at all, rather as what you do if you intend to go into librarianship. If I had wanted to go to study something scientific, I would have started to study psychology or sociology or something like that. In my opinion they represent scientific fields."

From this collectively shared foundation, the moral order of the library and information science tribe differentiates into two opposite versions. This split illustrates an internal disintegration within the discipline originating in a disagreement as to which occupation should be the reference point of the field. Both factions agree that virtuous studying must provide a smooth path to an occupation but they have different views of that occupation, one faction wants to attach itself to libraries and the other faction wants to break away from them: "I have got an impression that there is a twofold pulling, since both information science and traditional library science are there together. There has been a kind of tug-of-war." Besides, "I think it is a universal dispute in the world whether or not to totally separate the teaching of information science and library science. Some people go in one direction and others go in another direction."

According to the librarian version of the moral order, the tribe should be devoted to its tradition and serve public libraries. Assessing teaching and learning from the point of view of library is esteemed, likewise listening carefully their wishes and satisfying their needs. Good studying follows the practice in libraries closely and provides the students with a straight path to librarianship: "There should be more interaction. We should revise the curriculum so that it would better correspond to the practice". Similarly, it is defined as to be avoided and wrong if the demands of libraries are passed over or forgotten: "They work with and speak about fine ideas, but I don't think that much of it can be realised in practice." Everything that does not serve the interest of libraries is condemned as undesirable: "Since they intend to improve the status of the field, teaching has focused on science and information studies. Many times they don't want to admit that we are going to work in public libraries. In particular they train us for something more exquisite."

The other version of the moral order takes as its reference point the occupation of information officer. According to this version, the tribe should break away from the tight grip of libraries and expand its territory towards a new and promising area made possible by the rapid progress in information technology: "Information science is the part from which you can in a way proceed further. If we have library science then it is so tied up with libraries, I mean how fruitful is it to investigate it more and more. In my opinion information studies is something, it belongs almost between computer science and media studies." It is stressed that the discipline should educate experts in information management for which there is a growing demand in society. By fulfilling these needs, the tribe is believed to be able to develop, improve salaries, recruit men into the female-dominated field and enhance its low-esteem public image: "I doubt if this field can develop unless information studies continues its independent course or develops itself properly. As information society is being talked about and there is a tremendous amount of information, it is really important that we can organize it and work with it and manage it, I mean in general to analyse peoples' information needs and everything. In my opinion it can have a very good future. It is a new field which will become little by little more and more important, might become." In this way information science is defined as virtuous but it has to fight for space against the wishes of the opposite party: "There is a contradiction if all these public libraries want practical people".

The two factions of the disciplinary culture have opposite views of themselves and of each other.

The librarian faction stresses the importance of realism. According to this version, the tribe should keep its feet firmly on the ground and confess that even if new technology has something to offer, the practice in public libraries is far away from technological frontiers and fanciful visions: "They try to be scientific but it would be better to concentrate on practice. You should concentrate more on public libraries." Another student complains that "now they try to apply all sorts of things in order to make the field look more scientific and esteemed." Furthermore, in the field of new technology there is much competition, for which reason it is claimed that there are hardly any opportunities for the novices of the tribe to find jobs in that sector. Therefore promises of new kinds of jobs advocated by the other faction are defined as utopistic and as such reprehensible: "Information needs are taught in so many other places. Information studies can't claim it for itself. They try to because it would raise its prestige." Likewise, another student states that she "is rather sceptical towards the question how firms need that kind of employees." The only responsible decision to take, according to the librarian

faction, is therefore to continue realistically in the traditional way and forget utopistic scenarios.

The other faction defines the situation in opposite terms, stressing the value of dynamics. According to this version, the tribe will have a promising and interesting future if it is only ready to respond to the challenge and reorient its teaching appropriately. What is a virtue of realism in the librarian version of the moral order, becomes a vice of conservatism in this version of the moral order. The traditional training is regarded as conservative and the new trend oriented to information technology as dynamic: "It's very positive that we have got all these things, hypermedia and everything, because they are the thing today. In a way they are also experimental, not experimental in the sense that we don't know what we are doing, but in that sense that we are moving with the times." Moreover, it is stressed that in the information technology sector there are plenty of challenges for everybody and in the labour market the opportunities for the novices are at least good: "I do believe that we are fairly competitive, if only you are ready to develop yourself. Certainly it would be good to publicise the fact that our graduates make good information officers."

In summary, the moral order of the library and information science tribe is divided into two contradictory versions with regard to the right occupation of the field. The social identity projects of the novices are likewise twofold. The novices embracing the librarian version construct their social identity on the basis of library practice: "Some like to say they are studying informatics. It may sound more glamorous. I myself use only library science, I don't like to talk about information science at all." The social identity of the novices representing the other faction stems from the commitment to information science: "I'm now more interested in information science. I think that it has more future, that side will develop." In spite of a kind of civil war within the tribe, novices of both parties are markedly professionally oriented having few linkages to the academic world.

Discussion

The case-study of four disciplinary cultures in one university demonstrates how different kinds of values, aims, pressures and problems there are inside the academic world. Accordingly, teaching and learning in university have remarkably distinct meanings for students in different fields (see e.g. Boys et al. 1988; Entwistle and Tait 1990; Huber 1989, p. 281; Kolb 1985; Sheppard and Gilbert 1991; Thomas 1990; Vahala and Winston 1994). The core characteristics of the study fields are summarized in the following table.

Table 1. The core characteristics of the disciplinary cultures.

	Sociology and Social psychology	Public administration	Computer science	Library and information science
Orientation	academic	professional	professional	professional
Reference point	discipline	practice	firms	occupation
Aim	original project	degree	expertise	specific work-skills
Key activity	dedication	performance	learning by doing	hard working

To a certain extent these differences can be understood on the basis of the discipline's position in the hard-soft and pure-applied dimensions of the academic territory (Becher 1987, p. 289; Becher and Kogan 1992, pp. 91–92). In this manner it can be suggested that the disciplinary differences found in the research are not superficial features but partly inherent in the knowledge content that is being taught and studied in each field. Theoretical orientation, individualism and dedication to one's discipline emphasized in the culture of sociology and social psychology follow closely the logic of the soft-pure domain of academic territory also found in other studies (e.g. Aittola 1992; Boys et al. 1988; Kleinman 1983; Thomas 1990). Computer science, public administration and library and information science represent the applied knowledge domain and accordingly, they all have professional aims. The reference point of studying lies not in the core questions of the discipline but in the demands of working life.

However, professional orientation has different meanings for these disciplines. Computer science, in this research the only field representing the hard dimension of the academic territory, aims at control and new applications. It does not only respond to the needs of the labour market but by making rapid progress in technological applications it changes them and creates new demands. Public administration and library and information science belong to the soft-applied area even if the latter comes rather close to hard computer science in its emerging emphasis on information studies. In any case, corresponding to the soft dimension, professional orientation in these fields does not mean hard expertise and control but serving and developing the practice.

The demonstrated differences in disciplinary cultures can also be rendered comprehensible by the model presented by Squires (1990, p. 87). He constructs three ideal types of degrees: academic, professional and general. The academic degree has as its point of reference the discipline itself and it

has the implicit purpose of preparing students for research. This characterization fits perfectly for sociology and social psychology. The professional degree prepares students for certain occupations where most of the students go to work once they have graduated. This applies to computer science and library and information science. The general degree consists of many kinds of courses without a clear orientation either to discipline or to an occupation. Public administration can be categorised as representing a general degree since it has no straightforward counterpart in the labour market and therefore it aims to provide general qualifications for many kinds of jobs.

It must be stressed, however, that although this research has concerned the collectively shared moral order of each of the four study fields, it does not mean that there are no differences within disciplines. No moral order is fixed but is internally multivoiced, sometimes even contradictory, as in the case of library and information science in this research (see Evans 1988). The virtues and vices of a discipline are embedded in time and place, for which reason they are shaped by changing contexts. First, it can be argued that the local environment in a particular university has an effect on the morals of the disciplines. In other words, disciplinary cultures, especially in fields with “parochial” (Becher 1994, p. 153) frame of reference, are shaped by the characteristics of a particular department, not only by the discipline itself. Secondly, as Clark (1986) emphasizes, universities have distinct histories, traditions, profiles, that is, distinct cultures with their own “organizational sagas”. To some extent, this creates common university-centered organizational culture, which can diminish differences between disciplines in the same university. Thirdly, the national context is also of crucial importance since national traditions and cultural codes of behaviour can shape disciplinary cultures and the overall aims of higher education (see Gellert 1992, p. 1636; Wittrock 1985), as was shown, for instance, by Traweek (1988) who discerned essential differences in the culture of high energy physics in Japan and in the USA. Accordingly, it is reasonable to suppose that the findings of this study are partly moulded by the local environment in the University of Tampere as well as by the Finnish national context, but due to a lack of comparative empirical data it is impossible to specify this issue further.

Furthermore, current external pressures and demands toward higher education also affect the moral order of the disciplines. In Finland, as in other western countries, the share of budget funding for higher education has decreased in recent years, and universities and departments have to seek for external funding – they have to engage in “academic capitalism” (Slaughter and Leslie 1997) and to create “entrepreneurial responses” to the changing university-environment relationship (Clark 1998). On this basis, it has been claimed that “a new mode of knowledge production” (Gibbons et al.

1994) and “postacademic science” (Ziman 1996) are emerging. According to these conceptions, disciplines lose their importance and become fluid at their borders, because traditional, disciplinary oriented research is changing toward transdisciplinary, problem-oriented research projects, which also affects the teaching function of higher education and transforms the traditional academic values and norms. For instance, Slaughter and Leslie (1997, p. 222) suggest that to some degree, there will be an integration of academic, commercial and bureaucratic cultures inside academia. Clark (1998) likewise proposes that the entrepreneurial response to the growing external pressures creates “focused universities”, which means that universities centralize their activities and become more individualized. This builds coherent common culture and collective identity inside universities, which reduces the viability of distinct disciplinary cultures.

In spite of all these reservations to the universality and influence of disciplinary cultures, it can be argued that disciplines still have a crucial role to play in the functioning of higher education (cf. Becher 1994, p. 153). Clark (1998), for instance, stresses that in order to be effective, the emerging entrepreneurial beliefs as well as other new cultural elements have to be incorporated with the traditional values and norms of “the academic heartland” composed principally of disciplines and some interdisciplinary fields of study. Besides, it is noteworthy that according to Slaughter and Leslie (1997), entrepreneurial activities are highly concentrated in a few departments, mostly in hard-applied sciences that are close to the market. Thus, it can be maintained that it would be as unjustified to claim that disciplinary cultures are disappearing as it would be to deny the impact of local, national, financial and societal factors on the practices, values and morals of the disciplinary cultures.

The influence of the disciplinary culture also has limitations when considered from the students’ perspective. It has to be emphasized that the students are not passive objects of socialization. Students have their own life-histories and their own points of view from which they interpret their studies. Furthermore, each student has many social identities and correspondingly many moral orders to which adhere – for instance, a family, a workplace, an ideological or religious community etc. This becomes all the more obvious and visible since the student body is increasingly heterogeneous (e.g. Haselgrove 1994). It follows that students have to make priorities between different moral orders and that the commitment to the morals of the discipline varies among individuals: some students are always more virtuous than others. Moreover, if the moral order of the disciplinary culture has no resonance in the experience of a student there is always the possibility of changing the field of study and trying to find such study environments where there is a better correspondence with the cultural and the personal elements.

However, the moral order has normative power over the individual. This is indicated most clearly by the finding that even if some students do not follow the rules and morals of their culture, they still recognize the cultural codes and know how they are expected to study. Furthermore, in order to be recognized as a competent member of their tribe and to acquire social identity within it, they have to justify their deviant behaviour and give socially acceptable explanations for it. For instance, when novices of the sociology and social psychology tribe fall into the wrong studypattern by proceeding too rapidly and having professional aims in mind, they spontaneously give many explanations, such as that their economic situation is so difficult because of having a family to support that they cannot afford to devote so many years to their studies as they otherwise would like to do. On the other hand, by behaving publicly in a deviant way, students can also make visible the taken-for-granted assumptions of the disciplinary culture, bring new elements to it and sustain its vitality.

It is also important to take into account that the study phase has a crucial role in the socialization process of students. Traweek (1988) found three stages in the socialization of high energy physics students: undergraduate, graduate and postgraduate phases. Each stage was characterized by distinctive intellectual qualities and emotional states, which the students had to appropriate and display publicly. However, Traweek also discerned common, collectively shared characteristics, beliefs and cultural distinctions that affected all members at all stages of the community. In this study into four disciplines, the focus has been on the latter perspective, that is, on the shared moral order of each discipline, and therefore the socialization process in itself has not been included in the scope of the study. Yet it can be said that students learn to get to grips with the morals of their field gradually and that they are required to show their cognitive and cultural competence in different ways in different stages of their studies, the final threshold being the completion of the thesis.

In addition, the relationship between students' and teachers' conceptions of the moral order is an essential question with regard to the vitality of the disciplinary culture. In the final analysis, an academic tribe can reproduce itself only by being able to acculturate novices into its membership and its moral order. In this research the moral order of each tribe was basically shared by both teachers and students (Ylijoki 1998). For instance, the split of the library and information science tribe constructed from students' accounts has a parallel in teachers' accounts. Only in the case of computer science is there a difference in teachers' and students' conceptions, since the former try to steer the disciplinary culture in a more academic direction and the latter in a more business-life direction. But mainly the critique offered by the students

is directed towards the actual realization of the virtues in the daily life of the tribe, not towards the virtues themselves.

With regard to the development of teaching and learning in university, the research findings imply that quality assessment and development should assume different modes in different fields. From the cultural perspective, there can be no universal criteria for quality nor any single, correct model to be mechanically implemented in order to improve teaching. Instead, both the assessment and the improvement of teaching have to emanate from each department's own cultural basis. It follows that performance indicators, such as statistical data of the number of degrees and of the length of study times, can give reliable information about the quality and efficiency of the teaching and learning in different fields, but only if the data is interpreted discipline by discipline (see Vroeijestijn and Acherman 1990). For instance, a long duration of studies may be an indicator of poor mentoring and of a lack of motivation, but it may also be a sign of high quality teaching and learning that leads to competition between employers of students even before they finish their studies or to ambitious and time-consuming involvement in thesis writing and research work. The emphasis put on the internal development as against external control of teaching and learning does not mean, however, that disciplinary cultures should be taken as given. On the contrary, this perspective presupposes a reflective attitude towards one's own culture and its basic assumptions, as well as critical self-assessment of one's mode of activity as a necessary phase in the process of development.

Research into disciplinary cultures can be used as an important aid in this kind of developmental process. The rationale of the research is to make visible the taken-for-granted background assumptions on which the everyday life is based and to increase self-understanding among the academic fields. This can help to incorporate self-reflexive practices and critical examination of one's own basic beliefs. In this way the research can have emancipatory effects, as it can help in changing the moral order if it produces problems or represses human potentials. On the other hand, the research can also help to keep to the morals in the face of outer demands that do not fit with the culture. With increased self-awareness disciplines can orient better in changing higher education contexts and interpret external demands in such a way that they can follow their own internal good (MacIntyre 1987) and resist external claims if necessary. From this kind of self-awareness better mutual understanding can also grow. Representatives of different study fields can understand each other better when they acknowledge their different core commitments, which in turn can promote dialogue and co-operation in joint study and research projects.

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