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# Implementing outward-bound academic entrepreneurship in the human sciences

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Many universities today acknowledge that besides focusing on teaching, learning and research, they should also be involved in “service to the community”. Four questions arise in this regard: What exactly does this service to the community entail? How, within what framework, and under what conditions should this service be rendered? What criteria determine whether an activity qualifies as service to the community? In what type of structure should such outward-bound activities be embedded? Different universities — even different faculties within the same university — have answered these questions in different ways. The human sciences in particular struggle to see how they can use their research to contribute actively to a better world outside the university as well as how they can be rewarded for this both by their university and by the organisations they assist. Focusing on outward-bound academic entrepreneurship, this paper will attempt to answer the first three questions raised above and to show that there are in fact many opportunities for the humanities to be involved in academic entrepreneurship are plentiful.

## Academisch ondernemerschap in de humane wetenschappen

In de opdrachtverklaring van de meeste universiteiten wordt niet langer alleen maar verwezen naar hun traditionele taken (onderzoek en onderwijs), maar eveneens naar de rol die de universiteit in de maatschappij kan en moet spelen. Bij deze derde opdracht — ook wel academisch ondernemerschap, wetenschappelijke of maatschappelijke dienstverlening genoemd — kunnen de volgende vragen gesteld worden: Wat houdt dit ondernemerschap of die dienstverlening juist in? Binnen welk kader, onder welke voorwaarden en op welke manier wordt dit best geïmplementeerd? Welke zijn de criteria om te bepalen of iets als academisch ondernemerschap of wetenschappelijke dienstverlening beschouwd kan worden? En tenslotte, wat is de beste structuur om deze activiteiten in onder te brengen? Onderstaand artikel probeert deze vragen te beantwoorden voor de humane wetenschappen.

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Many universities today acknowledge (via their mission statements) that besides a focus on teaching, learning and research, they should also be involved in “service to the community”. Faculties of applied sciences (engineering departments for instance) and medical faculties have a long history of combining fundamental and applied research with service to the community by means of a relatively quick transfer of usable knowledge into practice. Faculties of the humanities typically see fewer possibilities and/or opportunities for the direct or indirect application of the outcomes of their research and teaching to communities outside the university. Of course this does not mean that they are not interested or involved in investigating and researching problems of practice. It is just that — unlike the research done in the applied and medical sciences — it is far more difficult to transfer their findings into the wider world. However, as will be shown, opportunities for researchers in the various fields of the human sciences to transfer usable knowledge into practice, based on their research, are plentiful.

In this paper, a distinction will be made between inward-bound and outward-bound academic entrepreneurship. The term academic entrepreneurship has two aspects: initiatives aimed at improving and/or changing the ways in which research, teaching, and collaboration with the community of practice are traditionally structured and executed, on the one hand, and the degree to which a university uses practice and practitioners for its research and teaching or tries to have an impact on practice based on its research, on the other. By the community of practice we mean the world outside the university, which could benefit from the research. Inward-bound academic entrepreneurship refers to the re-engineering of (part of) the core business of a university (research and teaching) to make it more community- and context-based. Outward-bound academic entrepreneurship promotes and supports the transfer of knowledge and technology between the university on the one hand and industry and other communities of practice on the other. It usually comprises four activities: contract research, intellectual property rights management, the establishment of new research-orientated and innovative spin-off companies, and the promotion of high-tech entrepreneurship and innovation.

Outward-bound academic entrepreneurship is sometimes referred to as “service to the community”. In some South African universities, however, separate entities exist for service to the community and for academic entrepreneurship. It is not always clear though whether they perform different activities. In cases where both concepts are used in the same institution, it is important to define them adequately to avoid confusion. Overlapping and complex structures may stimulate bureaucracy and demotivate entrepreneurial academics. They may also allow others to use the complexity in good or bad faith, thereby endangering their own career and/or the university’s reputation. In this paper, the terms outward-bound academic entrepreneurship and service to the community refer to the same concept.

The main focus of this paper is on outward-bound academic entrepreneurship and the relationship between the researcher, his/her research agenda and outcomes, and the community of practice. Where appropriate, spin-off effects on inward-bound academic entrepreneurship will be mentioned.

In summary, outward-bound academic entrepreneurship in general and in the human sciences in particular should cover the following three components:

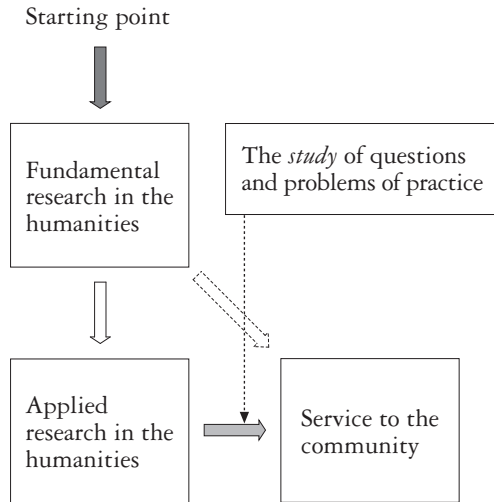
- community interventions, starting from the needs currently existing in local communities (the development component);
- applied research, also starting from needs currently existing in local communities (the research component), and
- activities building on the applied research of various individual departments and promoting interdisciplinary, problem-based and solution-driven collaboration (the interdisciplinary component).

The spin-off effects of outward-bound academic entrepreneurship on inward-bound academic entrepreneurship can be summarised as follows:

- complementing and further stimulating the more fundamental research done in and across faculties (the fundamental research component), and
- contextualising and upgrading lecturing (the teaching-learning component).

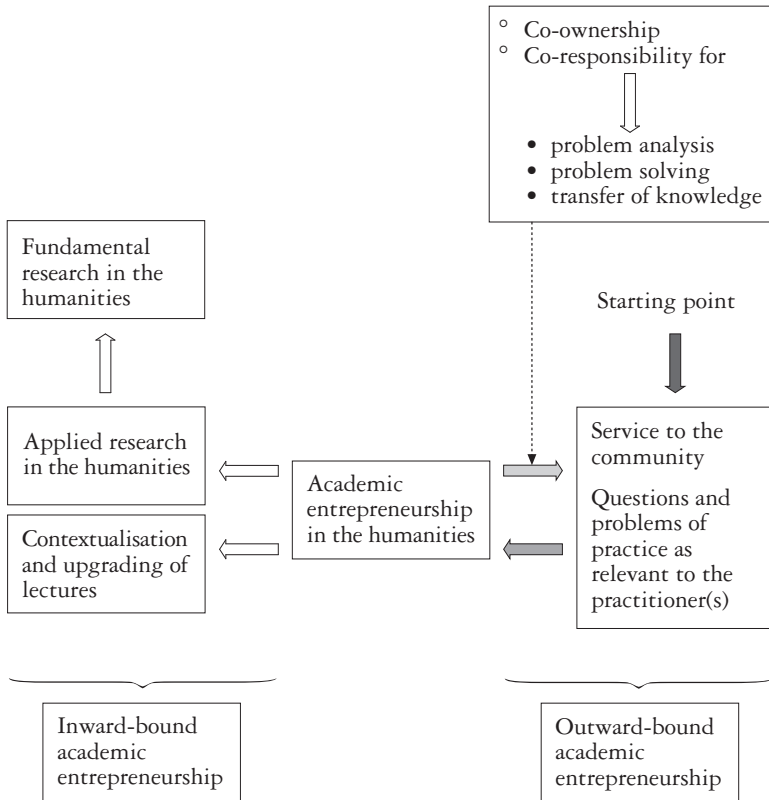
Another important aspect of outward-bound academic entrepreneurship (or service to the community) is the starting point. Traditionally — and this is currently still the prevailing model in most universities — the starting point is the researcher and his/her research agenda (figure 1a). Researchers study questions and problems of practice.

Figure 1a: Traditional view of academic entrepreneurship



One of the main problems of this model — especially in the human sciences — is that there is little or no transfer of research (results) to practice (Rosseel 2003). Since the transfer of knowledge is the core task of any university, a different model should be considered. In Figure 1b, the starting point is no longer the researcher but the questions and problems of the community of practice. However, this alone is not sufficient to facilitate successful transfer of research. As will be argued in this paper, the researcher should take co-ownership and co-responsibility for problem analysis, problem solving and knowledge transfer (Figure 1b).

Figure 1b: Research transfer view of academic entrepreneurship



The main questions for the various fields within the humanities which will be discussed in this paper are:

- How can researchers in the human sciences organise and become involved in active outward-bound academic entrepreneurship or service to the community? In what way does this differ from what they are currently doing? What criteria should be used to assess that involvement?
- What are the boundaries of this service to the community? In other words, what can/should be seen as part of a university's responsibility and what should not? What criteria should decide this?

- How can these researchers take responsibility for and ownership of the advice they give and the suggestions (for action) they offer? (Such advice and suggestions will be based on the literature in their academic fields and on their research, and will be used by the communities as a basis for their actions).

At the same time these researchers

- use the data of their interventions for further needs-based applied research, and
- improve the more traditional and fundamental research undertaken within the human sciences.

In other words, how can researchers in the human sciences (as members of a faculty or in the name of the university) take co-responsibility for and co-ownership of the social and economic development of a (local) community and the individuals of this community.

In order to answer these questions, four important aspects of academic entrepreneurship in general and entrepreneurship in the human sciences in particular will be discussed in more detail: inward-bound and outward-bound academic entrepreneurship; bridging the gap between research and practice; the issue of multidisciplinary research and collaboration, and service to the community and involvement with and from the business world.

## 1. Inward-bound and outward-bound academic entrepreneurship

### 1.1 Models, organisation and structure

Although it is beyond the scope of this paper to discuss models, organisation and structure in detail (cf Clark 1998; Debackere 2000), for any academic entrepreneurship initiative to succeed and continue, it must be embedded in an appropriate supportive structure. A flexible, easily accessible, non-bureaucratic, client-orientated and supportive organisation and structure can motivate entrepreneurial academics to be more creative and innovative and to remain within the university. There are various models for implementing academic entrepreneurship. In western Europe, one speaks of the Twente, Leuven, Ghent,

Leiden, Warwick, and other models (Van de Sijde *et al* 2002). These models differ considerably. A university wishing to involve itself in academic entrepreneurship in an organised way should choose the model or combination of models that best fits its culture.

The introduction and implementation of academic entrepreneurship and the consequent changes in organisation or structure at the faculty level and/or university level should go hand-in-hand with respect for the individual faculty member's choice of two out of the three tasks of any university: research, teaching and service to the community. It is nowadays difficult, however, for a university — or a faculty of the humanities, for that matter — to accept that all its (new) faculty members may choose only the two more traditional tasks: research and teaching.

## 1.2 Inward-bound and outward-bound academic entrepreneurship

Wijffels (2000: 3) claims that traditional universities are “[a] scientific bastion[s] guided by government” and that they should move towards “relatively autonomous public knowledge enterprises”. Butera (2000: 403) argues that

universities are knowledge enterprises *par excellence* that produce, broker and disseminate relevant knowledge [research] and train knowledge workers [teaching and learning].

From this we may deduce that academic entrepreneurship is also concerned with (the improvement of) what we have called the more “traditional” side of a university, its core competencies of fundamental and applied research on the one hand and teaching and learning on the other. The development of mathematical models to measure the value and impact of research articles (via, among other things, the number of times they have been quoted) is an example of this inward-bound academic entrepreneurship.

Another example is the “visitatie commissies” that have been instituted in some western European universities. A group of specialists in a certain field check the curricula, course materials and teaching approaches of their colleagues in other universities.

However important inward-bound academic entrepreneurship may be (Rosseel 2001b), it is only one side of the story. In the quotation above, Butera (2000) refers to the dissemination of relevant knowledge in ways besides just teaching it to students. Over the past decade, researchers in various fields in the human sciences have been complaining about the lack of transfer of their research findings to practice (Glaser *et al* 1997; De Corte 2000). Also, many practitioners and policy-makers believe that researchers talk mainly to one another and fail to tackle some of the most important and pressing problems of practice within the humanities (Brown *et al* 1999). Coulter & Wiens (2002: 20) write that

researchers often work in competitive, isolating faculties that discourage 'field' involvement and public visiting dialogue,

and that

researchers are encouraged to write for limited circles of other researchers in language often inaccessible to [the] public.

In summary, there is little dissemination of human sciences research in the communities of practice in terms of usable knowledge and if such know-how does reach "the public out there" it is hardly ever recognised as relevant.

This problem is not new, however. Argyris & Schön (1996) did some studies on it in the sixties and seventies (for an overview cf Argyris 1992). They came to the conclusion that

the practical advice derived from the experimental research will tend to work if the conditions of the experimental situation also exist for the person considering using the advice (Argyris & Schön 1996: 373).

This is of course not a very realistic scenario because it means that the practitioner has to organise (simplify) his complex and multifaceted environment in such a way as to match the experimental one.

In an interview with the newspaper *De Morgen* (Carpentier 2002) Craig Venter, an authority on gene and genome research, comments as follows:

I am pragmatic in my solutions; my goal is not to realise a breakthrough that is not going to be used. There are too many examples of scientific breakthroughs that have been made public but with which nothing has ever been done [my translation, PR].



This is certainly the case in many fields in the humanities.

The questions which follow challenge our comfort zone and require researchers in the human sciences (or any researchers, for that matter) to have the courage to change certain of their (epistemological) beliefs, values and behaviours:

- How can we bring our research and the knowledge based on that research to the communities of practice in a language that is understandable to them?
- How can we ensure that the usable knowledge and advice based on our research knowledge is relevant to them?
- How can we ensure that they actually use that knowledge, in an appropriate way, and that they understand why it works, so that they can use it independently and autonomously?

Universities — and particularly universities in developing countries — can no longer restrict themselves to inward-bound academic entrepreneurship, even if it includes the study of problems current in their communities of practice. To cite an old Chinese proverb quoted by Stanley Cohen (2001: vi): “To know and not to act is not to know”.

In summary, the “autonomous public knowledge enterprise” should not only be involved in research and teaching but also value and develop the idea of theory in practice (Argyris & Schön 1996). This idea is captured in the concept of outward-bound academic entrepreneurship (Rosseel 2001b). It is important to stress, though, that the involvement in outward-bound academic entrepreneurship should also contribute to the further development and improvement of the university’s core competencies. A good and constant communication between the faculty members involved in one or other of the forms of academic entrepreneurship is thus essential (but far from automatic).

Although it is beyond the scope of this paper to discuss the organisation and structure that necessarily follows from the intention to develop outward-bound academic entrepreneurship, the following issue may underline its importance. Academics opting for inward-bound academic entrepreneurship should be evaluated in terms of a number of criteria. Two have been mentioned above, ie the value and impact of the research and the quality of their teaching. Other criteria will have to be used to assess faculty members who choose (or are hired)

to become involved in outward-bound academic entrepreneurship. For example, one can hardly expect these researchers to publish at the same rate as their inward-bound colleagues. One criterion could be the impact of the outward-bound interventions on communities of practice such as classrooms, schools, universities, companies and (government) institutions. One could measure, for instance, the number of problems successfully solved and the independent and autonomous use of the transferred know-how by the practitioners. Research and publications would remain an important criterion but the requirements would differ. For this reason, some western European universities have created separate internal entities in which outward-bound faculty members have equivalent titles and salaries but different career paths, based on different assessment criteria.

Such a separate structure within the university should also help the entrepreneurial researcher to descend to “meet” the practitioner at his/her own level. Expecting practitioners to come up to the ivory tower, which a university still is to them, in order to obtain the information they need, is not very likely to bear fruit.

The idea of a separate, simple, flexible structure represents a first major step towards answering the questions above. Both the practitioner and the entrepreneurial academic have been recognised as important stakeholders and outward-bound academic entrepreneurship has acknowledged the need to make research results more accessible to members of the community of practice. But this meets only one of the challenges we identified above.

The following questions remain:

- Now that we have acknowledged the practitioners to be important stakeholders, how can we interest them in accepting the knowledge and know-how that we offer them? Indeed, Brown *et al* (1999: 35) rightly state that “researchers [...] feel that often relevant research is ignored [by practitioners] when important decisions are made [...]”. The gap is huge and there is an accompanying image problem.
- How can we see to it that the knowledge itself and the advice based on it are usable and accessible, ie understandable?

- How can we make sure that the knowledge which the researcher sees as relevant is accepted as relevant by the practitioner?
- How can we combine all this with research, an aspect that we have identified as an essential part of outward-bound academic entrepreneurship?

This brings us to our next topic: how outward-bound academic entrepreneurship helps to bridge the gap between research and practice.

## 2. Bridging the gap between research and practice

Aware of the remaining challenges mentioned above, the National Academy of Education (Brown *et al* 1999) has proposed a research approach called “problem-solving research and development” or “design research” to help bridge the gap between research and practice. This problem-solving research and development does not only focus explicitly on solving current problems of practice. It should at the same time be accountable for developing and testing general principles of education — or any other domain in the human sciences, for that matter — and educational change that advance fundamental understanding and that can be expected to apply broadly, beyond the particular areas in which the problem-solving research is done (Brown *et al* 1999: 25). Although quite general and rather vague, the definition suggests that this research approach may be useful for our purposes:

- The terms “problem-solving research and development” suggest that the approach entails a developmental aspect. It is not clear, though, whether its main focus is the development of general principles; the development of the communities of practice and its practitioners, or both. This question is important because it helps to determine the starting point of the researcher’s involvement (cf Figures 1a and b).
- It focuses explicitly on solving current problems of practice. It does not really say whether the researchers help to solve them or whether their currency holds for the researcher or the practitioner or both.
- It particularly stresses the research component — which is what we also need — but it does so in rather general and traditional terms.

Mary K Stein's (1999) comparison between traditional research and problem-solving research and development or design research helps to clarify the approach further.

Table 1: Comparison between conventional research and problem-solving research and development (Stein 1999)

| Comparison           | Conventional research                      | Problem-solving R & D   |
|----------------------|--|---|
| Starting-point       | Theories and/or problems of the discipline | Theories of action and/or problems of practice                            |
| Role of participants | Researchers study practitioners            | Researchers and practitioners co-design                                   |
| Accountability       | To rules of scholarly evidence             | To rules of scholarly evidence and to perceived usefulness                |
| Scope                | Relatively narrow-bore concerns            | Study of complex, natural systems   |
| Length of study      | Relatively short                           | Long-term with implications for interpersonal and political relationships |

Two aspects of Stein's table deserve some comment: the starting-point and the accountability of problem-solving research and development.

According to Argyris & Schön (1996), a theory of action may take two different forms: espoused theory and theory-in-use. By espoused theory they mean

the theory of action which is advanced to explain or justify a given pattern of activity [by or of an organisation or an individual] (Argyris & Schön 1996: 13).

By "theory in-use" they mean

the theory of action which is implicit in the performance of that pattern of activity. A theory-in-use is not a 'given' (Argyris & Schön 1996: 13).

A theory of action, then, is either an explanation given by a (group of) practitioners about why a certain problem has occurred or has been dealt with in a certain way, for instance. Or it is an explanation based on observation of an event given by an outsider (the researcher) as to why it occurred or was implemented in a certain way. In the case of simple, objective, non-emotional problems the evaluation by the practitioner, the observation by the researcher and the various aspects of the problem and its solution may be aligned. In the case of com-

plex, multifaceted (and especially ill-structured) problems such as the human side of change processes, the interpretation of the cause and symptoms of the problem and the view of the practitioner and the researcher may differ to a greater or lesser extent. At that moment the practitioner may no longer be interested in a true collaboration since his evaluation of the situation differs too much from that of the researcher. The knowledge or information may no longer seem accessible, understandable and/or relevant to the practitioner although the analysis based on the researcher's observation may be totally valid. The only way to solve this problem is to start from the point of view of the practitioner, from his beliefs, values, emotions and context. This may mean that the researcher can only commence his collaborative study later on in the process, after he has gained sufficient trust from the community of practice in which the problem has occurred and from the practitioner(s) involved in it. This is why the long-term character of the study and its implications for interpersonal (and political) relationships are so important.

The second aspect that needs further explanation relates to the accountability of this type of research to the rules of scholarly evidence and its perceived usefulness. Argyris (1992: 414) claims that these are not simultaneously possible. In his view,

social scientists are faced with a fundamental choice which hinges on a dilemma of rigor or relevance. If social scientists tilt toward the rigor of normal science that currently dominates departments of social science in American universities, they risk becoming irrelevant to practitioners' demands for usable knowledge. If they tilt toward the relevance of [...] research [of current problems of practice], they risk falling short of prevailing disciplinary standards of rigor.

In fact the authors of the National Academy of Education Report (Brown *et al* 1999: 16) who proposed the problem-solving research and development approach came to the same conclusion:

Among the array of existing research and development programs [it] reviewed, the panel found excellent examples of each of the features above, although few, if any, programs displayed all of them (Brown *et al* 1999: 16).

Most design research exemplifies this. Although the authors make sincere efforts to work closely together with the practitioners with

the aim of marrying theory and practice, they can only go so far because of their concern with the disciplinary standards of rigour.

Accepting the reasoning above would mean that — with regard to the purpose and the methodology of one's research — a strict division between inward-bound and outward-bound academic entrepreneurship is required. However, the concept of “rules of scholarly evidence” is interpreted quite differently among academic institutions, in different fields (of the humanities) and in different countries. Although data are not readily available in this regard, it is believed that research in the human sciences in South Africa is rather qualitatively than quantitatively oriented. Quantitative research is based on thorough statistical analysis, with the “rigor of normal science” as Argyris (1992) puts it. Moreover, there is a tendency in some fields in the humanities nowadays to question the usefulness of quantitative research for some topics. With regard to research on epistemological reflection, for instance, Baxter Magolda (2002: 8) concludes that “like some other researchers [...] I am less hopeful that ‘objective’ measures of these complex constructs are possible or useful”. Indeed, quantitative research — however necessary, for instance in the preliminary steps towards building a reliable theory — probably widens the gap between researcher and practitioner more than it bridges it. Baxter Magolda's research methodology suggests that there are also possibilities for rigorous research when dealing with complex problems of practice. But apart from being a methodological issue, bridging the gap between research and practice — one of the goals of outward-bound academic entrepreneurship — is also an educational challenge. Practitioners have to learn how to interpret and work with research findings (Christensen & Raynor 2003). It is the task of the university to initiate this debate, not only within but especially outside the research community.

In summary, if the researcher agrees to start from the point of view of the practitioner and with the appropriate disciplinary standards of rigour, the problem-solving research and development or design approach may be helpful in answering some of the questions raised in the first two points above. First of all, the outward-bound academic can interest the practitioner, since he is dealing with a problem the practitioner is currently confronting. Secondly, researchers and practitioners do not only work together to focus on (solving) a

current problem, they co-design the way in which to do it and the research project around it. This means that the information is made available by the researchers (accessibility) and that they must make sure that it (the knowledge) is understandable to the practitioner. Finally, since the researchers have agreed to deal with a current problem of practice suggested by the practitioner, the knowledge and advice they give will in all probability be relevant to the practitioner. What this approach does not guarantee, however, is that the practitioner will take ownership of the knowledge and use it independently and autonomously to deal with similar or new problems. This has been identified as a very difficult problem requiring further research (Rosseel 2002).

From the foregoing, it is not yet very clear what problem-solving (design) research and development concretely entails or how one goes about implementing it. It is beyond the scope of this paper to comment on this. Examples are available of (partial) problem-solving research and development within the human sciences that can be used as case studies (cf Rosseel 2001b; De Corte 2000; Stein 1999). Acknowledging the challenge of combining all aspects of the approach, Stein & Coburn (2003) are currently investigating different models of collaboration between research and practice.

We can best summarise this section by turning once more to Baxter Magolda (2002: 8):

My role as a researcher evolved from sole interpreter of the data to a mutual collaboration with participants to interpret the data. I now view my participants as partners [...]. One of the major implications of my approach to measurement is that effective assessment is context-bound and the context is best selected by the participant.

In view of the fact that the context-based nature of a problem is essential to create ownership, as well as the complexity and ill-structuredness of the problems of practice that can be related back to one or more fields within the human sciences, we are left with one more challenge: the fragmented nature of the research and the (usable) knowledge that we need in order to solve such complex and multifaceted problems together with the practitioners.

### 3. Multidisciplinary problem-solving research and development

#### 3.1 Experts and generalists and the basic qualities of the outward-bound academic

In his book *De kardinaal heeft verdriet* (2002), Rik Torfs, an expert in canon law, argues that a constant growth in knowledge volume is only possible by means of an in-depth and continuous specialisation. Science, he claims, is thus being cut into small pieces, with — for every newly developed (sub)domain — a “proper herd of specialists”. They are people who know almost everything about almost nothing (Torfs 2002: 61). This has a number of side effects. Torfs mentions two, to which we shall add a third:

- The danger that the expert develops a feeling of complacency. Somebody who knows his subject matter very well, who reaches — “technically” speaking — a high level and who understands the rules of the game enjoys this mastery. Being really good at something brings joy, but also a self-confidence that is not always justified. The increase in one’s command of one’s own domain of expertise goes hand-in-hand — unnoticed — with a decrease in knowledge of other domains. In other words, decrease in knowledge leads to an increase in self-confidence (Torfs 2002: 62). Could it be that this side effect of specialisation, this feeling of self-confidence and maybe complacency prevents us from leaving our comfort zone?
- Even more critical, Torfs claims, is the observation that thorough specialisation and the fragmentation of knowledge, which undoubtedly finds its origin in the laws of the exact sciences, become inevitable in the domains of the humanities. Here, too, the synthesising view gives way to the precise analysis of detail. The consequence of this is worrying, says Torfs. He argues that knowledge in a field or subject matter other than one’s own domain of expertise becomes suspicious. It leads others to question one’s professional attitude (Torfs 2002: 62). How then can we ever become involved in complex, multifaceted problems of practice? Can a linguist — for instance — who has shown interest in relevant subject matter beyond his own field ever be considered credible



when he makes suggestions and performs interventions in educational matters? To practitioners confronted with a current problem of practice he may well be. At the same time, he cannot be credible to other specialists whose domain of expertise he has entered. This could mean that other experts — colleagues from other departments at the faculties of humanities, for instance — can indirectly “force” one to remain in one’s comfort zone. If change requires leadership and courage, to face peer specialists and discuss matters with them once one has entered their realm of expert knowledge requires not only a great deal of courage but also a humility that does not lead to dependency, understanding that does not lead to inactivity, perseverance that does not lead to stubbornness, self-confidence that does not lead to complacency, and the ability to ask basic, naive questions without any feeling of shame. This may be the first indication of what the profile and personality of an outward-bound academic should be.

- Finally, the fact that science is being fragmented because of a continuous in-depth specialisation leads in certain domains to the deterioration of a situation that was once highly beneficial for interdisciplinary collaboration. Organisational behaviour is one example of such a domain. Staw (1991: 806) summarises it as follows:

[...] I would like to think of this endeavour as an expansion of common ground [...] with the ultimate goal of returning organisational behaviour to the interdisciplinary field it was.

Experts in the human sciences undoubtedly have a lot to offer but Torfs seems to imply that they are not necessarily the best interlocutors, partners or stakeholders to involve in problem-solving research and development with regard to complex, multifaceted, ill-structured topics. Do we need a different profile? Is this profile available within our existing university setting? Can we motivate experts to broaden their scope so that they can actually help solve current problems for and with local communities of practice? How can we guarantee the indispensable communication that is needed between inward-bound and outward-bound academics (both on research issues and for expert advice)? Will we be able to guarantee the survival of outward-bound academics in an expertise-focused, inward-bound university culture? These are fundamental questions and they are the reason why I have

stressed the need for a separate structure within the university to support outward-bound academic entrepreneurship.

Working together across domains is very important if we want to do something about this fragmentation which prevents us from taking co-ownership and co-responsibility for the analysis and the solution of current problems in local communities of practice.

### 3.2 Interdisciplinary collaboration and more basic qualities of the outward-bound academic

To the question of what interdisciplinary research looks like in reality, Torfs (2002: 65) answers:

[...] the fragmentation of the scientific disciplines is so thorough that a common platform for becoming involved in real interdisciplinary research is very often absent. Instead, an addition sum is offered of contiguous disciplines which lack real tangential planes. Interdisciplinary collaboration looks a little bit like the [...] lonely motto of Jeremy Bentham: the greatest happiness of the greatest number is the measure of right and wrong. Everybody is very happy in his own little corner [my translation, PR].

This is not a very reassuring observation, especially since we can assume that Torfs is referring to the research environment he is acquainted with: that of the human sciences.

But his motivation to try to involve academics in interdisciplinary research fits very well with everything we have discussed so far. Torfs says that practising science that is too specialised threatens to suffocate inspiration. He is not referring to the inward-focused inspiration that helps researchers to gather more and more specialised and detailed information about a well-defined “technical” subject (in the human sciences) thanks to an ever-improving methodology, but about the inspiration that is focused on the world out there and that looks for a synthesis of diverse disciplines as well as about the inspiration that longs for other aspects of reality (Torfs 2002: 65). Without this inspiration, the scientist becomes a spectator trying to understand why things are the way they are, instead of the way they could be (Torfs 2002: 216). This ability to synthesise; an interest in other aspects of reality, leading to this inspiration, as well as the capacity not only to study complex problems of practice but also to give advice

on the way things could be, are the basic qualities of any outward-bound academic.

Interdisciplinary collaboration is thus necessary in order to be able to capture the complexity of the questions and problems of the community of practice and to help researchers to take co-ownership and co-responsibility.

### 3.3 Top-down and bottom-up interdisciplinary collaboration

In his book *Hoe overleven wij de vrijheid?* (1997), the philosopher Herman de Dijn discusses — among other things — how postmodern humankind tries to find (a) new worldview(s), a new image of the world in which we live. He writes:

Here, too, [...] much discussion is going on to come to a new view of the world or new views of the world via a synthesis of philosophy, art and science. This should happen consciously and in a voluntary way on the basis of interdisciplinary collaboration, and the results should be ‘disseminated in-depth’, which means that they should be made known and propagated on a large scale among the population [my translation, PR] (De Dijn 1997: 34).

The search for (a) new worldview(s) is of course not the issue here. One could easily replace it with the search for any issue across the domains of the human sciences. What De Dijn does is to challenge the holistic approach that brings together (aspects of) — in this case — philosophy, art and science. He calls it a “late flare-up of the scientist mentality” (De Dijn 1997: 34). It is vain to believe (he continues) that one can draft or draw up a worldview (whether based on interdisciplinary research or not) and give this view — in a pragmatic way — an in-depth dissemination at the various levels of the population (De Dijn 1997: 34).

What he says next confirms Torfs’s idea of outward-focused inspiration:

A worldview is not merely a more or less explicit philosophical all-in vision, but something that plays a role in the most concrete human relationships, something that is embedded in daily life [my translation, PR] (Torfs 2002: 34).

What De Dijn and Torfs seem to imply is that interdisciplinary collaboration is not a starting point. It is not something theoretical or artificial. Even when it concerns current problems of practice, it should not be a top-down process. A holistic approach *per se* does not necessarily capture the complexity and the multifaceted nature of reality. However, starting from something that plays a role in the most concrete human relationships, something that is embedded in daily life may lead to a form of flexible holism. Depending on the type of epistemological complexity and/or the current problem of practice a temporary, *ad hoc* holism is installed that appeals to the domains of expertise and its specialists as needed. But this bottom-up interdisciplinary collaboration is far more difficult to plan or to control.

### 3.4 Interdisciplinary collaboration as a means to stimulate learning

There is another aspect to interdisciplinary research and collaboration. Salomon (1998), an educational psychologist, typifies constructive learning environments as

team-based, often interdisciplinary, oriented towards the solution of complex, real-life problems, and utilising a variety of technological means.

In other words, when different disciplines work together, powerful learning environments are created. This means that interdisciplinary collaboration is not only an important means of gathering external information with regard to complex, multifaceted, ill-structured problems, but at the same time an (indirect) means of stimulating learning. Salomon's suggestion may help us to answer the question of how to guarantee the autonomy and sustainability of usable knowledge that has been transferred into practice.

### 3.5 Interdisciplinary research in the business world

Porter (1990) writes about co-operative research. From his description we understand the term to include interdisciplinary research and collaboration. When he mentions co-operative research, Porter mainly refers to collaboration in the field of the applied sciences. His long-term study of ten countries worldwide, with regard to their compe-

titive advantage, leads him to conclude that co-operative research is more the exception than the rule. He argues:

Firms are prospering in countless technologically sophisticated industries without co-operative research (Porter 1990: 635).

And when they do become involved in it they do not necessarily contribute their best scientists and engineers to such projects. They participate in co-operative research mainly to maintain their corporate image and to hedge the risk that competitors will benefit (Porter 1990: 635). Porter (1990: 636) concludes:

Co-operative projects among firms are [...] notoriously hard to manage, because participants face complex motives.

Although it is sometimes hard to admit, the different (sub-)departments in many faculties look a bit like separate companies. We only have to observe our own environment at the university to see that real interdisciplinary collaboration and research within or across faculties and/or departments is not obvious, especially not in the human sciences. Torfs (2002) and De Dijn (1997) have offered an explanation. Interdisciplinary collaboration within the inward-bound academic environment may be more difficult to stimulate and to achieve than in the case of outward-bound academic entrepreneurship. Or, to put it positively, interdisciplinary collaboration and research based on outward-bound academic entrepreneurship may become a role model, an example and a stimulus for inward-bound academics, as long as the communication between the two groups is well managed, of course. Craig Venter, the genome expert, says in the same interview in *De Morgen* (Carpentier 2002):

I only unravelled the first genome a few years ago. One of my talents is that I am able to make links between disciplines that are not evident.

Yet another skill which an outward-bound academic should possess.

Although interdisciplinary research and collaboration — whether inward-bound or outward-bound — is definitely something to aim for, Porter's research and the Venter example show that it may be a better strategy in the short term to look for an outward-bound academic in the human sciences who is capable of and interested in

combining various domains of specialisation. In other words, somebody whose expertise involves having considerable knowledge about a number of more or less related domains.

Thus far, all the challenges mentioned at the beginning of this paper have been covered. However, two questions remain. First, what interest does a university have in becoming involved with communities of practitioners (the business world, for instance) beyond the aim of gathering research data, and *vice versa*? Secondly, how can we determine what sort of service to the community should be dealt with by the outward-bound side of the university and what should be left to the world “out there”, to the practitioners themselves?

#### 4. Service to the community and involvement in the business world

##### 4.1 Universities and the business world

The genome engineer and gene researcher Craig Venter (Carpentier 2002) claims that if one wants new ideas and methods to have an impact on society, one needs someone to invest in their implementation. For him, it is clear that in a capitalist society, commercial interest and importance are essential, in order to reap the rewards of breakthroughs.

It may be easy to find investors for good ideas generated in the fields of the applied and medical sciences. It is less simple in the domain of the humanities, but not impossible. In South Africa, for instance, where the workforce is shrinking fast because of HIV/Aids, companies are willing to invest in training and development programmes for their workers. They start their own “universities” (eg the Edcon group and Telkom) or their own separate training institute (eg Pick ’n Pay and Denel). Workers need to alter their behaviour, therefore trainers have to adopt new learning and instruction approaches. Often they do not know how to do this (Rosseel 2003). Thanks to the fundamental and applied research performed in the human sciences, substantial knowledge is available about these issues. The better children and adolescents are trained at school, the easier and speedier it will be for them to become meaningful participants in the economy.

Companies are willing to pay for this as long as they know that there will be a return on their investment. It would be worthwhile for researchers in the human sciences to become stakeholders in this and to take co-ownership and co-responsibility for the return.

There is thus a clear interest in good communication and collaboration with the business world. Like researchers in the human sciences, an important stakeholder in helping to bridge the gap between research and practice. Porter (1990: 629-30) claims that forms of partnership between universities and the business world are to a nation's advantage. He points out certain important aspects that are worth mentioning in view of the questions raised in this paper:

- 1 High educational standards are paramount (and should be perceived as such by the world 'out there').
- 2 Teaching is a prestigious and valued profession.
- 3 There are respected and high-quality forms of higher education besides the university.
- 4 There is a close connection between educational institutions and employers.
- 5 There are strong links between research institutions and industry.

The first two points actually represent clear and present dangers in the South African context. A negative image does not facilitate collaboration. The third point is important in the discussion about reshaping the higher education landscape. The fourth and fifth points are part of the development of outward-bound academic entrepreneurship.

It is clear that the collaboration between a university and the business world will also be beneficial for its inward-bound side. To cite one example: it is to a nation's advantage, Porter (1990: 629) claims, that the majority of students receive an education and training with some practical orientation. Indeed, research on learning and instruction shows that a good understanding of what is going on in the world "out there" (eg in the world of business or education) may increase the situated character and currency of what is being taught and thus augment students' interest and knowledge retention (Vermetten *et al* 2002; De Corte 1995).

## 4.2 Outward-bound academic entrepreneurship, consulting and spin-offs

In the traditional university culture, any involvement in local communities beyond the study of phenomena of practice for research purposes or on the request of government agencies and exceptionally, companies, or the occasional lecture based on research and answering a (current) concern of practice, is usually regarded as belonging to and thus the responsibility of the world “out there”, not the academic world.

But Butera (2000) argues that a university, the knowledge enterprise *par excellence*, should not only produce and disseminate but also be a broker of knowledge. The notion of brokerage suggests an active involvement in the activities of others. A question then arises as to the criteria for deciding whether an activity can or should be considered part of (outward-bound) university activities or whether it falls under the aegis of consultancy.

Outward-bound academic entrepreneurship in the human sciences aims to:

- bridge the gap between research and practice;
- use research-based knowledge that is not yet common practice or is not being used at all in local communities of practice;
- translate research in one or more disciplines of the human sciences into usable knowledge (based on a current problem of practice);
- ensure that the usable knowledge is sustained in the local communities so that practitioners can use it independently and autonomously to solve similar or new problems (transfer of knowledge);
- explicitly use the data obtained from collaboration and intervention with practitioners for further research;
- become involved in “unique” interventions (repetitive activities that can be done by practitioners and that need no further research belong to the realm of outward-bound academic entrepreneurship);
- pro-actively educate the community of practice on how to read, interpret and use published research data (theories, models), and
- enjoy self-supporting financial status in order to sponsor its outward-bound and related inward-bound activities. There are no commer-



cial intentions or activities from the academic side. There may be a commercial interest and importance for the recipient — a company or government, for instance. (In this regard, one should be aware of the ongoing discussions as to the independent character of this type of research.)

From the foregoing it is clear that outward-bound academic entrepreneurship differs from traditional consulting in both its intention (the novelty of the situation, the uniqueness of the problem and the feedback to research) and its focus (being content-driven rather than finance-driven).

Two issues: that of unique interventions, and that of research-based knowledge that is not yet common practice or is not being used at all in local communities of practice, deserve some further comments. Exactly what knowledge can be used independently and autonomously by practitioners depends on the type of problems which are current and on the level of development of a country. As such, it will differ from country to country. It is clear that universities should not compete with the knowledge workers they have trained — their former students. Certain activities may be part of outward-bound academic entrepreneurship in some countries but not in others. It will depend on how autonomous the community of practice is with regard to certain knowledge. Once a community is receptive to the introduction and integration of research-based knowledge with regard to a particular problem, and thorough and widespread dissemination exists, the outward-bound academic may decide to start up a spin-off company and commercialise his ideas. This process is common practice in the domains of the applied and medical sciences, though less so in the human sciences. But that does not mean that it is impossible (Rosseel 2001a).

## 5. Conclusion

In our modern knowledge-based economy, academic entrepreneurship poses an important challenge to universities all around the world. If well managed, academic entrepreneurship can offer a major competitive advantage. This is definitely the case in South Africa in view of the plans to reshape the higher education landscape. The con-

cept of academic entrepreneurship involves the three missions of any modern academic institution: research, teaching and learning, and service to the community.

Inward-bound academic entrepreneurship relates to the continuous improvement of the more traditional side of the knowledge enterprise. Outward-bound academic entrepreneurship, the main focus of this paper, deals with service to the community and research based on the involvement of academics in current problems of practice. We have tried to show that service to the community goes beyond the study of problems of practice, beyond giving lectures to communities outside the university about one's own research or in connection with a problem of practice, and even beyond giving advice to a community of practice. All this, in fact, is part of state-of-the-art inward-bound academic entrepreneurship.

Outward-bound academic entrepreneurship requires co-ownership and co-responsibility for the problem-setting, the problem analysis, the problem-solving process and the final solutions. Only this method can help to bridge the gap between research and practice, especially in the human sciences. Long-term involvement — from problem detection to final solution — will give us ample opportunity to interest the practitioners and to apply the problem-solving research and development (design) approach suggested by the National Academy of Education (Brown *et al* 1999). We should, however, also be aware that there is a serious communication and culture gap between the two types of academic entrepreneurship. For this and other reasons, we suggest the creation of a separate structure within the university to stimulate and support outward-bound academic entrepreneurship.

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