

Bringing structure to the championing of environmental improvements in innovation work

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Abstract

The literature on environmental champions tends to emphasise the potential of voluntary action on behalf of a committed individual. This model, we suggest, neglects structural aspects of the organisation that is the context of the champion. The question we will seek to answer in this presentation is: how are we to theorise environmental championing in a way that avoids voluntarism, but without falling into the opposite structuralist trap?

This paper draws on four case studies of process technology investments in chemical and dairy companies in the UK and Sweden. The analysis is based on a political process perspective on organisations.

In these cases there was a category of former engineers who had progressed to management positions in part due to having done environmental work. Sometimes this choice was made because environment was a hot topic in the organisation at the time. Their bundled engineering and environmental skills had been rewarded in terms of promotions. In three out of four cases these managers were internal project clients, and had some leeway in promoting environmental performance. Their initiatives, however, had to be closely aligned with the company agenda.

We here see how organisational structure, both in terms of historic rewards and the current agenda, helped shape these individuals' careers and their actions. On the other hand, their own career interests contributed to the choices they had made, and were making as part of the project studied. A suitable theorisation of environmental championing thus needs to take both structure and action into account.

1 Introduction

Technology is a long-standing, central topic in environmental policy. It has been discussed both as part of the problem and as a solution to environmental issues. The question of how we are to bring environmental concerns to bear upon the use and development of technology remains important for policy-makers in this area.

Recent years have seen an expanding focus in environmental policy from manufacturing processes in industry to the consumption of products, and from single firms to innovation systems.¹ This does not mean, however, that the problems with pollution from manufacturing industry are solved. We will here focus on environmental innovations in production technology, often captured in terms of ‘cleaner technology’ and ‘end-of-pipe technology’ (Clayton et al 1999).

Environmental and technological work in firms are sometimes rather separate domains in firms. There is a risk of firms focusing its environmental work on formal management systems and administrative procedure instead of technological measures that can more directly improve their environmental performance. This paper will contribute to answering the question of how environmental concerns can be integrated into production technology investment projects in process industry firms.

The shaping of intentions and motives in innovation processes is done by the actors in the firm. Actors who have an interest in taking environmental aspects into concern may promote those issues in the decision processes, and thus act as carriers of such environmental intentions.² We may define ‘environmental championing’ as *any effort made by an (individual or collective) actor in a firm to promote environmental issues*.

Such environmental championing may, of course, be unsuccessful. Effective championing is a matter of managing to influence decision-making. The differences in influence between champions can be seen as reflected in the success or lack of it of their environmental promotion. We suggest that environmental championing therefore needs to be understood in its organisational context, and that the influence of champions is in part determined by structural organisational factors.

The structure-agency issue is a long-standing topic of debate in the social sciences.³ Action-oriented theories tend to focus on individual achievements and neglect contextual and historical factors, whereas structuralist theories may underplay the freedom of action of the individual. We will here use this dichotomy to discuss theories of championing, and to develop a new theorisation of environmental championing. Our theorisation builds on notions of expertise, careers and interests, as well as the opportunities offered to individuals by their organisations. We will thus try to show how we need to understand environmental championing both as action and structure.

This paper will start with a review of different conceptualisations of ‘champions’ in existing literature. After setting out the methodology of the study, we will then discuss the results with a focus on the career histories of environmental champions, and the opportunities given

¹ See for example Pujari 2006 and Hilliard and Jacobsen 2003.

² It is perhaps worth noticing already here that an interest in promoting environmental issues does not pre-suppose heart-felt environmentalism on behalf of the actor. Such an interest may be rooted, as we shall see later, in other things, for example raised status or control of resources.

³ See for example Giddens 1984.

to them by their organisations to promote environmental issues. Finally, we will conclude by setting out a new model for explaining environmental championing.

2 Environmental champions between action and structure

A common category of actor in the literature on environmental management is the ‘environmental champion’.⁴ This is mirrored by the literature on innovation where the ‘innovation champion’ is a common character⁵, and in organisational studies there is the similar ‘change agent’ (Burns and Stalker 1961, 199; Buchanan and Storey 1997). We will here draw on these additional sets of literature, since although they highlight different actors with different skills, there is a common theme of conceptualising promotion (of environmental issues, of a technology and of organisational change).

There are different approaches to conceptualise what a champion is, and they can be described as lying on a spectrum from action to structure orientation. We will here contrast such approaches starting at the action end of the spectrum.

At this end of the spectrum are models where the champion possesses certain qualities – like enthusiasm and willingness to take risks – which is what makes him/her a champion. This essentialist way of understanding champions runs the risk of being voluntarist, i.e. underplaying the organisational context of the champion and overplaying the achievements of the champion. Another, related, weakness with this model is that the champion tends to become a hero, and everyone who does not go along with the ideas of the champion becomes a villain.⁶ Resistance is in such a model seen as destructive politicking done by others, rather than something a champion would be involved in to constructively promote his/her aims.

Another way of understanding champions is to focus on the behaviour of championing (promoting) the environment. Anderson and Bateman (2000) studied the ways champions framed and presented environmental initiatives and compared successful championing attempts with unsuccessful ones. This approach recognises that the organisational context matters for championing, and that champions need to be reflexive about what they do. However, this is still a relatively voluntarist model in its concern with the receptivity of managers to champions’ ideas.

At the opposite end of the action-structure spectrum is a structural model of championing. Here the organisational context stimulates the emergence of champions by creating opportunities for employees to assume this role. The findings by Fincham et al (1994) illustrate this model. They studied the careers of IT specialists in financial sector firms, and observed how there were structurally defined opportunities for this group of employees to further their careers and strengthen the legitimacy of their expertise through the championing of IT solutions (Fincham et al 1994, 276).

This more structure-oriented model thus highlights the organisational context of championing, and so avoids voluntarism. However, it also stresses the career and status interests of the champions, and the choice they make in seizing the opportunity offered to them by the organisation. This model therefore also includes an action aspect.

⁴ See for example Anderson and Bateman 2000.

⁵ For a review see Jenssen and Jørgensen 2004.

⁶ Tidd et al (2001, 327) even speak of ‘assassins’.

Furthermore, self-interest is here part of what motivates the champions. Heroic accounts of champions tend to be uncritical of the champion's goals (environmental improvement, technological innovation, organisational change etc.), and describe them as benefiting the whole organisation. An explicit, but perhaps extreme, example of this is given by Jenssen and Jørgensen (2004, 80): "*It seems that the champion always acts unselfishly and in the best interest of the organisation but the organisation and its leadership do not understand this and resist change*". A political approach may reveal a more complicated set of motivations and interests.

Attention to structural factors is thus useful to counteract the voluntarism and the heroism tendency of some champion literature. This is a matter of putting the champion into perspective and so relativise his or her achievements.

Another way to achieve this is to look at what other roles are played by firm actors in organisational change. For example, Tushman and Nadler (1996, 151-2) present four roles that they claim are critical to innovations: idea generator, internal entrepreneur (champion), boundary spanner (gatekeeper) and sponsor (mentor). Whilst such typologies are somewhat arbitrary⁷ this set of roles serves to emphasise that champions are but one of the roles necessary for change. This way it puts the contribution of the champion into perspective.

A further relativisation of the champion comes from Buchanan and Storey (1997) writing about organisational change agents. They point out that individuals may change roles during change processes, and point to role taking and role switching as important aspects of championing. This highlights the process of becoming (as well as ceasing to be) a champion, which is in conflict with essentialist and therefore static theorisations. And whilst Buchanan and Storey's perspective is strongly actor-centred, we would argue that there is also a structural, contextual component to the process of becoming a champion.

We have here discussed the common action-oriented (essentialist and voluntarist) models of environmental champions. The hero-like qualities of the champion have been relativised by focussing on championing as a behaviour rather than as a trait, and by looking at broader sets of roles played in change events. Accounts of championing with a more structural slant highlight the importance of the organisational context in producing opportunities for championing. But, an extreme structural perspective runs the risk of making the champion a mere product of the organisational structures, and we must not lose sight of the choice a champion makes in taking on this role.

Applying this discussion to the case of environmental championing, the question we will seek to answer in this paper is:

- *How are we to theorise environmental championing in a way that avoids voluntarism, but without falling into the opposite structuralist trap?*

As discussed above, we are here interested in environmental championing in the context of innovation processes. The following empirical questions have therefore guided the research:

1. *Why would firm actors promote environmental concerns in innovation processes? Who would do it?*
2. *Under what circumstances are environmental concerns successfully promoted in innovation processes?*

⁷ Buchanan and Storey call this approach to management research 'listology', and argue that the point of such lists is the plurality of roles they point to, rather than any particular set of roles they portray (1997, 140).

3 Methodology

The literature on environmental innovation is dominated by environmental management literature that tends to neglect the political character of innovation work. This paper brings science and technology studies (STS) to bear on this literature. It does that by paying more attention to the diverse interests of actors in innovation work and their influence on the decisions made as part of it.

In relation to environmental innovations environmental staff would seem to be natural candidates for the champion role, given their (presumed) knowledge about environmental aspects. King showed that environmental staff are sometimes able to be gatekeepers between the environmental and engineering functions in the firm (1995, 276; 2000, 236), but they may also be excluded from technological work. Managers may be better situated to successfully promote environmental issues (Vickers and Cordey-Hayes 1999, 87), but it is less obvious that they would recognise a need for doing so. Special attention is here given to managers, engineers and environmental staff as potential champions.

The data was collected mainly through (43) interviews to capture the complexity and situatedness of different actors' influence on the decisions made, and the environmental and technological outcomes. Drawing on a political process perspective on organisations (Pettigrew 1985)⁸, efforts were made to gather data on the organisational context and history.

Skill and knowledge are obviously important for innovation work. In a political perspective sensitive to the interests of the actors 'expertise' is a useful notion for conceptualising this. We will draw on Fleck's tripartite model of expertise, which proposes that expertise is made up of knowledge, power and tradability⁹ (1998, 145). The data collected includes information not just on the formal education and qualifications of the interviewees, but also their career histories.

The data was analysed as case studies of investment projects. The unit of analysis was the technological choices made as part of these production technology investment projects.

By comparing cases from Scotland and Sweden, and from the chemicals and dairy industries (see table 1), national and sectoral factors were explored. In particular, it was expected that the role of environmental regulatory pressure (Irwin and Vergragt 1983; Kagan et al 2003) would be exposed through comparing the dairy industry with the more heavily regulated chemical industry. Furthermore, it was hoped that the potential influence of private life commitments as expressed in the work place would be discernible through comparing Sweden – with its somewhat stronger pro-environmental popular attitudes – with Scotland. This also links in with the voluntarist models of environmental championing. If such models of championing were valid, then we would expect this national level difference to matter.

4 Discussion

We will in this section first briefly introduce the results of the study, and then progress to discuss the findings in more detail. The discussion will first focus on the career histories, and after that on championing opportunities.

⁸ The political process approach was usefully reviewed by McLoughlin and Badham 2005.

⁹ The tradability component reflects the leverage experts get from their positions on internal and external labour markets.

Environmental staff had a role (in companies with an environmental permit) to monitor the technological work in the projects for permit implications, but they were not the only ones promoting improved environmental performance. The systematic, mandated promotion of environmental issues of environmental staff can be contrasted with more contingent environmental championing performed by other staff.

Environmental staff, however, had relatively little influence on the technology (apart from implementing regulatory requirements when this was sanctioned by the company, and this was not always the case). We will here instead focus on some of the managers who successfully championed environmental issues.

We have two examples of this. In both of the Swedish cases the internal clients successfully promoted environmental performance. At Dairy Sweden this was the Technical Director making sure that a planned oil-fuelled boiler was replaced with district heating, and at Chemicals Sweden it was the Production Manager who made sure that the treatment of vent gases was included in the main investment project rather than organised as a separate, permit-driven project, in the hope of finding a cleaner technology solution.

In this section we will discuss these environmental champions in terms of what they achieved, and seek to provide an explanation for this that is sensitive to both structure and action aspects. We will thus avoid a voluntarist analysis of environmental champions, whilst also avoiding making them structurally determined dupes. Empirically, this will be achieved through investigating both the – private, career and positional (Morgan 1997, 161) – interests of the environmental champions and the structurally shaped opportunities given to them in the projects, as well as earlier during their careers.

Environmental merits in engineers' careers into management

In the companies studied environmental and engineering work was to a large extent kept separate. And whilst it is true that the engineers did little environmental work in the projects in particular, and in general, there were also examples of engineers who had benefited in their careers from doing environmentally motivated work, and who had developed hybrid environmental and technological expertise.

Table 1 Managers with engineering backgrounds having benefited from environmental merits

Case	Position	Project role
Chemicals Sweden	Production Director	Internal client
Dairy Sweden	Technical Director	Internal client
Dairy Scotland	Technical Director	Internal client
Chemicals Scotland	Technical Director	(Unclear)

We have one example from each company of people with engineering degrees who had started off in engineering positions and in subsequent careers had moved into management in part based on environmental merits. They are listed in table 1. We here have three Technical

Directors, all of which had an added on responsibility for environmental affairs. Three of the four were also the internal clients to the projects studied.

These four managers highlighted that having done environmental work in the past had contributed to their careers. Their *environmental merits*¹⁰ mentioned are listed in table 2. Apart from technical work, their environmental merits also included managerial (apart from technology management) and administrative tasks. Some of this work overlaps with environmental staff tasks, but was for each person combined with environmental merits of the technology type, which was less common among environmental staff. These individuals had *bundled* some environmental skills with their technical and managerial skills.

Table 2 Environmental merits

Type of work	In more detail
Technology	Managing environmentally motivated investment projects Managing operations and maintenance of end-of-pipe utilities Environmental lab-work
Management	Establishing environmental management systems Building up environmental staff capacity
Administrative	Applying for permits etc.

This was not the only *environmental career path* open to engineers, however. There were also engineers who had moved into full time environmental staff positions.¹¹ We should also note the one example of a senior environmental technology specialist at Chemicals Scotland. These three environmental career paths are visualised in figure 1.

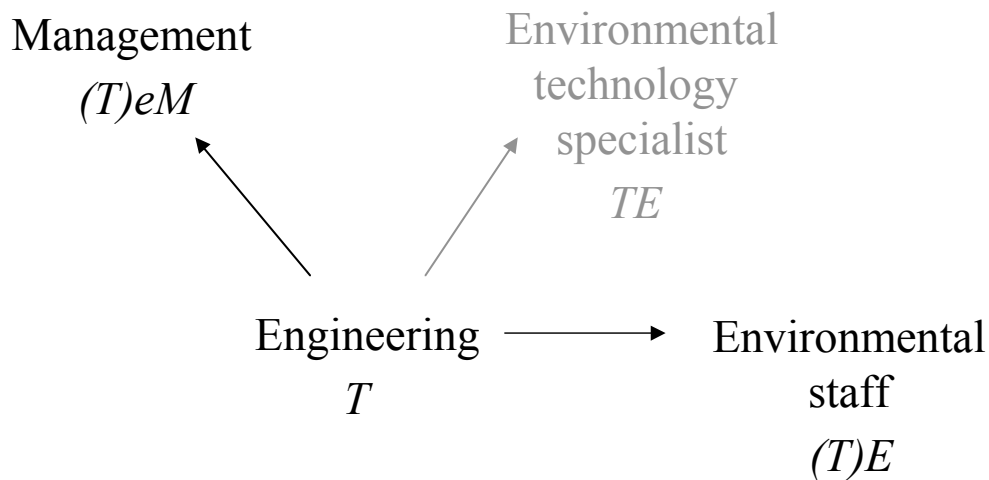
All three career paths represent formation of *hybrid expertise*, i.e. people developing bundled expertise across traditional knowledge boundaries (Fincham et al 1994, 22). The management path is here the least environmental one, in the sense of not doing environmental work full time. It was a matter of adding another, secondary skill (denoted by a small letter in the figure 2), rather than full specialisation on environmental (or environmental and technological) work. A full combination, or hybrid, of actively used environmental and technological skills was unusual (as denoted by the grey environmental technology specialist path in the figure).

There were, as we have seen, some possibilities for engineers of picking up environmental merits in engineering. Another strategy might be to spend some time in an environmental position (one or two cases in the data), for a future management career. There is, however, a risk for an engineer of staying too long in an environmental position. Environmental staff do little technological work, and there is a risk that his or her engineering skills will not be maintained and up-graded. This in turn may be detrimental for opportunities of going back to engineering, and into technology management positions.

¹⁰ ‘Merit’ here means a recognised achievement.

¹¹ This was even a relatively common background among environmental staff.

Figure 1 Environmental career paths and skills combinations for engineers



Notes: 1) Abbreviations used: T=Engineering, E=Environmental, M=Managerial.

2) Small letters indicate secondary skills, and letters in parenthesis indicate skills once possessed and currently at least at risk of not being updated and maintained due to lack of use.

3) The grey path indicates that this was uncommon – only one example in the data.

Figure 2 shows this possible path via an environmental position (grey arrow). It also illustrates that no interviewees started off in the environmental area and moved into engineering. This certainly limited their possibilities for a technology management career, and senior environmental responsibilities were often held by technical managers limiting the line management careers in the environmental area.¹²

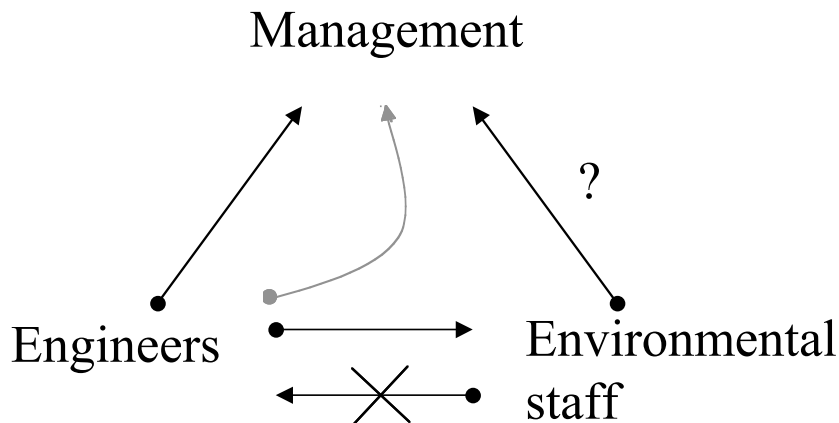
The motivations mentioned by the former engineers who had opted for these environmental career paths reveal some important facts regarding the internal labour markets. For some it was just another job that came along. For others, it was a matter of being attracted to environmental issues as “*a hot topic*”¹³ in the company. They had hoped to further their careers by achieving results in an area where they could be expected to be highly visible. This happened in the dairy industry in the 1990s, but earlier in the chemicals industry, reflecting that sector’s longer history of regulatory pressure. This motivation was mainly mentioned by engineers in management careers.

For some it was also a matter of aligning *private life environmental interests* with their professional lives. This was mentioned by some of those going for environmental staff jobs, sometimes mentioning in the same breath the career penalties such a move brought in terms of for example salary, as evidence of them being motivated by private life interests rather than by furthering their careers.

¹² There could, however, be line management career paths for environmental staff via other areas, for example quality, but given the selection of interviewees in this study we do not know.

¹³ Production Director at Chemicals Sweden

Figure 2 Engineering and environmental career paths



Notes: 1) Dots and arrows indicate start and end points respectively.

2) Grey, again, denotes that this career path was unusual.

Structured opportunities of championing

We have thus identified a range of different motives for opting for such management careers “with a green tinge”, and observed that the organisational context contributed to such career choices. Irrespective of the underlying motives, these careers brought the individuals into good positions to champion environmental performance in the projects studied, as we shall see below.

As we saw in table 1 the internal customers in three out of the four cases had made such careers. Their position in management enabled them to take on the internal client role in the projects, which was arguably a relatively influential one. The internal customers were involved in early stage planning of the projects, and approved any later changes to them (or led steering groups who made such decisions). This gave them some leeway in terms of making decisions promoting environmental performance. As we mentioned above, the two internal clients in the Swedish cases took this opportunity.

These opportunities were *shaped by the company agendas*. In the Chemicals Sweden case the inclusion of vent gas treatment in the project was motivated by the win-win argument of expected resource efficiency gains making the costly end-of-pipe treatment redundant. This was well in line with the general emphasis on explicit win-win solutions in this project. In the Dairy Sweden case the district heating solution was not only environmentally beneficial, but also cheaper than the proposed new boiler. Virtually no costs were accepted in this project for the sake of environmental performance improvement.¹⁴ The championing opportunities available were thus shaped by the company agendas, but the champions did also have an impact and were successful in contributing to improve the environmental performance.

¹⁴ Apart from changing one of the acids used for cleaning, a minor change given the large size of the project.

Table 3 Factors explaining championing

Case	Permit	Environment a priority	Private commitment
Dairy Scotland	No	No	No
Dairy Sweden	Yes	No	Yes
Chemicals Sweden	Yes	Yes	Yes

We can account also for the other two potential champions. In the Chemicals Scotland case the Technical Director was not given the internal client role, and so had less influence on the project. In the Dairy Scotland case the Technical Director, who like the others with this title had an added-on environmental responsibility, did not in spite of this in the internal client role promote environmental performance in the project. Contributing factors to this were the low environmental ambition level in the company and the absence of an environmental permit. We can also note that he did not express any strong private life environmental commitments, and the low priority given to environmental performance in the company meant that there were no rewards for environmental initiatives. Table 3 summarises the pattern of factors that distinguishes this case from the two Swedish ones.

5 Conclusion

We have in this paper been able to put forth a new theorisation of environmental championing that evades the opposite traps of essentialism (and voluntarism) and structuralism. By linking this behaviour to the career background of potential champions as well as to the current situation in the organisation that he or she is in, we have seen that both action and structure components are needed to account for environmental championing.

On the one hand we saw that the potential champions had made the career choice of bundling environmental skills with their initial engineering skills in part to further their careers, and in some cases also as a way of aligning private life environmental interests with their professional lives. On the other hand, this was possible because the companies rewarded such hybrid expertise in their recruitment and promotion of managers which highlights the contextual, structural factor of organisations offering particular career opportunities to their engineering staff. The interaction of individual – private, career and professional – interests with the organisational context shaped the careers and expertise of these managers, and made them good environmental championing candidates.

Furthermore, we saw that when these managers were in the internal client role they had some leeway to influence project decisions and so champion environmental issues, but also that even in this relatively influential position the championing initiatives were aligned with the company agenda - although through their access to early stage project planning, these champions could even have some influence on that agenda. The environmental motives put forth had to be, as in other cases, aligned with economic motives. Also in the actual championing situation it was the confluence of individuals with certain interests, and an organisational context offering certain opportunities that explained environmental championing.

We have thus produced an account of environmental championing that does not overly rely on the inherent qualities of a champion, and emphasises the organisational, structured context as a cause of championing. We have also not reduced the champions to structurally determined products of the organisations, but highlighted their own interests as a motivating factor. Moreover, this explanation does not make champions heroes in the sense of altruistic do-gooders, but sees self-interest and career promotion as an intrinsic aspect of an explanation of who becomes involved in environmental championing.

To avoid essentialism we should talk of potential environmental champions, who given the right opportunity may engage in environmental championing as a behaviour, rather than calling some people environmental champions irrespective of the structured context in which they act. To avoid structuralism we should pay attention to what actually motivates someone to promote environmental improvements, and not assume that this “good cause” is motivation enough in itself.

In terms of the structure-action dilemma, this explanation of championing also highlights how the context of the individual: the career opportunities and rewards offered and the company agenda, are structural aspects of the organisation from the point of view of the individual member of staff making such a career. At the same time, however, they are action aspects from the point of view of management setting policies on promotions and strategic priorities (assuming that management has if not a monopoly on so at least a dominating input in the setting of such policies). Structure and action is in this way co-produced (as is technology and organisation) (Russell and Williams 2002, 83).

Finally, we have seen how regulatory pressure shapes management career paths for engineers willing to bundle environmental skills with their technological and managerial skills, thus creating a mechanism that can contribute to bridging the gap between technological and environmental work in firms.

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