

# Managing in-company standardisation while avoiding resistance<sup>1 1</sup>

## *A philosophical-empirical approach*

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### **ABSTRACT**

*Standards may be an advantage for a company, but employees often resist them because they feel they are forced to behave in a certain way. Even a broad approach like TQM seems to have too little focus on the 'human aspects' to prevent resistance and failure during change projects like in-company standardization. This paper uses a philosophical approach to study why staff tend to resist company standardisation initiatives. Foucault and Habermas provide insights into the reasons for this resistance but do not solve the tension between freedom and control. Dooyeweerd's philosophy seems to be more promising. This paper uses a company standardisation project of an automotive supplier to examine three philosophical approaches to understand resistance to standards and to investigate how this resistance can be avoided by managing in-company standardisation in a more holistic way.*

**Keywords:** Resistance, Process Standardisation, ISO 9001, TQM, BPR, ISO-TS 16949, Foucault, Habermas, Dooyeweerd, Automotive

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## INTRODUCTION

‘Conforming to standards means following the advice of others, relinquishing a certain degree of one’s freedom of choice and self-control to others, and often becoming more similar to many others as well – none of which is very consistent with the concept of an actor. We may therefore expect a certain reluctance to follow standards – in particular those that are well known and followed by many – from individuals and organisations seeking to be highly autonomous, innovative, and different’ (Brunsson and Jacobsson, 2000, p. 134). Actors may view standards negatively because these can limit responsibility, prevent them from doing or saying what they want, and incur high costs during conversion from current practice to the practice prescribed in the standards. Moreover, standards may lead to uniformity (Brunsson and Jacobsson, 2000, p. 136). ‘Many of the objections to standards are similar to the objections to rules and regulation in general. Standardisation is often seen as an unwelcome, unnecessary, and harmful intrusion into a world of free, distinct individuals and organisations that are wise enough to decide for themselves, or into the world of civil society or free markets. Standardisation, it is felt, will mean regulation from outside, whereby actors, things, and conditions are now to be shaped in a uniform manner’ (Brunsson, 2000, p. 171). Standardisation is the activity of establishing and recording a limited set of solutions to actual or potential matching problems, directed at benefits for the party or parties involved, balancing their needs, and intending and expecting that these solutions will be used repeatedly or continuously, during a certain period, by a substantial number of the parties for whom they are meant (De Vries, 1997). In the case of in-company standardisation, the activity is carried out fully or mainly within the company, the standard may be used outside the company as well.

The issue of resistance to standards has received little attention in the literature on managing standardisation within a company. Even studies that provide a broad managerial approach ignore it (Adolphi, 1997; AFNOR, 1967; Boh & Yellin, 2007; Wenström et al., 2000; Van Wessel, 2010). These objections may apply to all standards but probably in particular to management system standards because these affect human behaviour in a more direct way than technical standards. Therefore, this chapter starts by discussing management standards and examining the paradox between benefits of implementation on the one hand, and resistance to this implementation on the other hand. We discuss that broad implementation approaches like TQM and BPR fall short in avoiding resistance and/or failure. Inspired by Lelong and Mallard (1995) who referred to Foucault in their introduction to a special issue of *Réseaux* on standardisation, and by a study by Van Veldhuisen (1996), we analyse resistance to such standards using Foucault’s (1977) analysis of anonymous power systems. This analysis provides an explanation for resistance but not for benefits. Habermas’ (1987) concept of communicative action provides additional insights but does not solve the problem of the tension between control and freedom. Dooyeweerd’s (1955, 1957) philosophy overcomes this tension and provides the basis for a holistic management approach. We apply this approach in the case of a standardisation project in a company. This project was related to the company’s quality management system which was based on an international quality management standard. We evaluate the company standardisation project and the resistance to it during a six-year period, using quality management literature and philosophical studies by Foucault, Habermas and Dooyeweerd.

## THEORETICAL BACKGROUND

### **The paradox: benefits of standards and resistance to them**

The paradox of benefits of standards and resistance to them may be related to the difference between common and individual benefits of standards mentioned by Arthur (1989). Psychologists emphasise human resistance to control – freedom versus order (Brehm and Brehm, 1981). The same terms are used by David (1995, p. 18): ‘The kernel of the problem posed for private and public decision-making with regard to the setting of technology standards may be construed to be nothing more and nothing less than the fundamental issue with which all social organisations are confronted: where to position themselves on the terrain between the poles of ‘order’ and ‘freedom’.’

In this chapter we focus on management system standards. More than one million organisations have obtained a certificate showing that their quality management systems meet the requirements in the international standard ISO 9001 (ISO, 2008, ISO 2015 and ISO, 2018). Several researchers report positive impacts of implementation of ISO 9001 (Cadadesús and Karapetrovic, 2005; Corbett et al., 2005; Lo and Chang, 2007; Nicolau and Sellers, 2002; Padma et al., 2008), others find hardly any or no positive impact (Dick et al., 2008; Martínez-Costa et al., 2009; Terziovski et al., 1997; Tzelepis et al., 2006), and some report mixed positive/neutral effects (Benner and Veloso, 2008; Boiral and Roy, 2007; Nair and Prajogo, 2009; Naveh et al., 2004; Yeung et al., 2003). The best explanation for these differences seems to be the motivation to implement the standard. Is the company internally motivated to implement the standard because it is a tool to improve performance, or is it just implementing it because it needs the certificate for their position in the market? (Nair and Prajogo, 2009; Terziovski et al., 2003; Yeung et al., 2003). Boiral and Roy (2007) find a positive effect of internal motivation on performance improvements related to ISO 9001 implementation. However, in case of low internal motivation, external pressure does not necessarily lead to more human resource problems and a sort of iron cage of bureaucracy (Weber, 1922; Boiral, 2003), and external pressure can encourage a better integration of ISO 9001 (Boiral and Roy, 2007, p. 240). In these studies, ‘motivation’ refers primarily to the motivation of the organisation’s management but few studies take employee motivation into account. Some address the internalisation of practices related to ISO 9001 (Nair and Prajogo, 2009; more references in their paper) but they focus on the measures prescribed by the standard rather than on the attitude of the employees. Lazaric and Denis (2005) report that implementation of ISO 9001 may lead to stress because of a change in routines and consequent broadening of tasks, and an aversion to writing and recording the majority of tasks. Surprisingly, literature about organisational routines (Becker, 2008) pays little attention to resistance. However, Connor (1997) noted the importance of employees in achieving quality management objectives.

Van Kemenade et al. (2011) focuses on the employees themselves (his case is not about ISO 9001 implementation but about a more or less similar situation of accreditation of universities of applied sciences in Flanders (Belgium) and the Netherlands). He reports that professionals in these organisations are willing to contribute to the process of obtaining accreditation if this process has internal added value, has a motivating object, has procedure and subject, has simple rules, and does not have control as its dominant value. He also states that willingness to contribute also depends on employee characteristics (is loyal to the organisation, sees self-interest, and relates to the organisation and does not delegate to others) and organisation characteristics (does not have quality experts to do all the work, gives enough management support, and has its internal quality management system in place). In other words, the basic

attitude is positive, but many conditions have to be fulfilled. If this is not the case, professionals may react with ‘dramaturgical compliance’ (just pretending to comply, fooling the auditor). Involvement of employees is found to contribute to the success of ISO 9001 implementation (Brown et al., 1998; Mahadevappa and Kotreshwar, 2004).

Some studies report a positive impact of ISO 9001 on employees. In Egyptian manufacturing firms, ISO 9001 implementation improved employee motivation (Magd, 2008). Almost 50% of registered Spanish firms reported an increase in employee satisfaction (Casadesús and Karapetrovic, 2005). However, the information in these studies comes from respondents at management level, not from employees. Brown et al. (1998) report that ISO 9000 certification did not bring any significant improvements in staff motivation and staff retention within Australian SMEs. Employee commitment was the most often (50%) mentioned problem in these companies. In a Swedish study, several quality management approaches were compared. Users of ISO 9001 reported fewer improvements in the organisation than non-users (Lagrosen and Lagrosen, 2005).

ISO 9001 views the organisation as a network of manageable processes designed to satisfy customers and includes measurable objectives, management control, and documentation (Furusten, 2000). ISO 9001 has codified the layman’s conception of a successful organisation. It sees organisations as manageable and controllable units which can be used by management as instruments for fulfilling predetermined goals, strategies, and visions. It ignores the scholars that find fault with rational models for control and management of organisations or that cast doubt on the whole conception of being modern (Furusten, 2000, pp. 83-84). In a study on the implementation of the 1994 predecessor version of ISO 9001:2008, Naveh and Erez (2004) found that the implementation of the standard focuses workers on documentation, standardisation and conformity to rules and procedures and not on a culture of innovation.

In the 2000 and 2008 version of ISO 9001, the number of compulsory procedures was reduced from 19 to six. The 2015 version only refers to the requirement of ‘documented information’, the extent depending on the size of the organization, the complexity of processes and competence of persons (ISO, 2015, paragraph 7.5). Although the standards do not prescribe a lot of paper work, in practice, this is often different. Manders (2015) shows that this practice may differ per employee. The attitude towards actual use of control measures depends on awareness, perceived usefulness and ease of use, and the willingness to contribute to continuous improvement depends on the extent they feel responsible for the functioning of the ISO 9001 system. If these conditions do not apply, employees may ignore the system or show resistance. The process approach prescribed in the 2000, 2008 and 2015 versions of ISO 9001 ‘forces’ people to behave in a way prescribed by the system; in fact, they are part of the system. Its approach resembles the ‘cybernetic’ view as described by Hofstede (1978). ISO 9001:2008 and ISO 9001:2015 refer to employees as ‘human resources,’ next to other resources such as equipment and money and this is exactly the consequence mentioned by Hofstede (1978, p. 460). It is not surprising that such a system may cause concern and unrest among employees. Different theoretical lenses may be used to study this: theory of planned behaviour (Ajzen, 1991; Manders, 2015), innovation diffusion theory (Rogers 2003), and the technology acceptance model (Davis, 1989; Davis et al., 1989). Theories on change management (e.g. Bevan, 2011; Carnall, 2007) provide approaches to involve employees in change projects.

## TQM

An approach that pretends to involve people during change projects is Total Quality Management (TQM). TQM involves the application of quality management principles to all aspects of the organization, including customers and suppliers, and their integration with the key business processes (Dale et al., 2007: 29). It is an integrated approach, consisting of principles and practices, whose goal is to improve the quality of an organization's goods and services through continuously meeting and exceeding customer's needs in most competitive ways (Talib et al., 2010).

The concept of TQM is often confused with other practices such as quality circles and ISO 9000. Although similarities exist between TQM and other business process improvement practices, the TQM philosophy pretends to be all-encompassing. Dale and Cooper (1992, p. 11) state that TQM is a much broader concept than the initiatives which have gone before, encompassing not only product, service and process quality improvements but also those relating to costs and productivity, and people involved and development. To put it in Spencer's words: it blurs the boundaries between the organization and the environment. Entities previously regarded as outsiders (e.g. suppliers, customers) are now considered part of the organizational processes (Spencer, 1994). Although different quality experts emphasize different aspects, TQM can be summarized as a systematic approach to the practice of management, requiring changes in organizational processes, strategic priorities, individual beliefs, individual attitudes, and individual behaviors (Olian and Rynes, 1991; Zink, 2007). Spencer (1994) states that TQM is not a cut-and-dried reality but an amorphous philosophy that is continuously enacted by managers, consultants, and researchers who make choices based on their own conceptual frameworks concerning the nature of organizations.

Due to its amorphous character, TQM has been defined in different ways. For example, Kanji (1990) defined it as 'the way of life of an organization committed to customer satisfaction through continuous improvement. This way of life varies from organization to organization and from country to country to another but has certain principles which can be implemented to secure market share, increase profits and reduce costs'. Berry (1991) defined the TQM process as a total corporate focus on meeting and exceeding customers' expectations and significantly reducing costs resulting from poor quality by adopting a new management system and corporate culture. The British Standards Authority (1971) defined TQM as follows (BS 47778, Part 2): *A management philosophy embracing all activities through which the needs and expectations of the customer and the community, and the objectives of the organization are satisfied in the most efficient and cost-effective way by maximizing the potential of all employees in a continuing drive for improvement.* This definition, as van der Wiele (1998) mentioned: *'...seems to fit with the broader views in quality management, in which quality management becomes synonymous with 'good management' and the focus is no longer on the specific quality activities, but on all aspects of managing the business.'*

Talib *et al.* (2011) define TQM as a set of management practices applicable throughout the organization and geared to ensure the organization consistently meets or exceeds customer requirements. Based on a literature review of research papers on TQM practices they extracted the following major practices of TQM: '(1) Top-management commitment (includes

leadership, management support and management commitment), (2) Customer focus (includes customer satisfaction and orientation), (3) Training and education, (4) Continuous improvement and innovation, (5) Supplier management (includes supplier relationship, supplier quality and supplier partnership, collaboration), (6) Employee involvement’.

However, despite its emphasis on employee involvement, literature indicate for some time some limitations of TQM as well. Based on a literature review, Reed *et al.* (2000) noticed a direct relationship between the adoption of TQM and improved firm performance. However, Zink (2007) pointed out that the first reports of failures in the implementation of TQM appeared in the early 1990s, and first surveys by US and UK consultancy firms showed that two-third of the implementation processes have been given up (Brown *et al.*, 1994). The primary reasons for failures (or success) are leadership, management commitment and involvement, established need and strategic view (long term). Similar experiences have been made in Europe (Dahlgard *et al.*, 1997; Zink, 1997). However, for companies taking a more ‘structured way’ in introducing TQM by using the models of the international quality awards based on self-assessment approaches, such as the American Malcolm Baldrige National Quality Award or the European Quality Award (EFQM, 1992), the situation seems to be partly different. Some studies show that especially the award-winning companies achieved – among others – improvements in their financial performance (Zink, 2007). But here too the success rates have to be considered as mentioned above: regarding any major change of an organization like business re-engineering or lean management or the realization of a Toyota like production system *no more than a third of the companies gain the success they have intended* (Zink, 1997). In summary, failures have been related to inadequate implementation of TQM mainly caused by a lack of leadership or the willingness and ability to change the culture.

## **BPR**

Similarly, we may learn lessons from the success factors of other concepts that has been implemented in businesses. One of these is Business Process re-engineering (BPR), popularized as a formal concept by Hammer (1990), Davenport and Short (1990) and Hammer and Champy (1993), but with earlier roots: Harrington (1987) emphasised process improvement in action. BPR has been defined in different ways with different terms (e.g. business improvement, business process redesign or business process re-engineering) which roughly all refer to the same type of activity: pointing out that gains in performance can be achieved by taking a holistic and objective view of business processes (Macdonald and Dale, 2007). Macdonald and Dale (2007) report that in general TQM and BPR do not exclude each other but rather complement each other and both are integral approaches. In fact, several fundamental principles and themes of BPR, such as the integration of people and technical aspects, are similar to those which are related to TQM. One of the key differences is that BPR places more emphasis on equipment and technology and TQM more emphasis on people.

Some organizations have been able to achieve good results with Business Process Reengineering (BPR). For example, Caterpillar, Inc. reported cost savings between \$10 and \$20 million over a five-year period from BPR initiatives (Paper *et al.*, 2001). However, in many cases, BPR has failed repeatedly to deliver its promised results (Al-Mashari *et al.*, 2001). Hammer and Champy (1993) claim a failure rate of 70%, Al-Mashari *et al.* (2001) show in an international BPR survey that the success rate of BPR is higher (55.46%).

Paper et al. (2001) conducted a BPR case study at Honeywell Inc., USA, for the purpose of uncovering the success factors of BPR. From this case study they developed a set of general lessons. In line with Al-Mashari et al. (2001), who state that many of the reported failures are thought to be due to the primary focus of BPR on 'technical aspects', the majority of these ten formulated lessons in the case study at Honeywell are not about BPR 'tools' and/or 'techniques'. Almost all lessons are directly related to (the management of) 'human aspects'. For example, the very first lesson they report is that people are the key enablers of change. People do the work and therefore must be trained, facilitated, and nurtured. In short, the lessons learned for BPR concern mainly 'soft' issues about encouragement, involvement, communication, dedication and ownership. Further, support from the top is critical, but the actual implementation should be carried out bottom-up. Finally, if the managerial attitude remains that of 'command and control' and/or their behaviour does not change, transformation will most likely fail.

In summary, a TQM approach is broader and more encompassing than ISO 9001 and BPR. However, it is not obvious that a TQM approach is always successful. And also the improvement approach of BPR can fail if not implemented right. The success factors of TQM and BPR illustrate the importance of interdisciplinarity. Too much focus on technical aspects while not recognizing or ignoring the more 'human aspects' might lead to failures in business practices such as in-company standardization.

However, will ISO 9001, TQM and BPR be successful by just focusing more on the 'human aspects' of improvement or change processes? Which human aspects? Are there more aspects relevant? To answer these questions, we will investigate these standards / approaches in a deeper way. Because of the diversity of angles and the need to combine these, a holistic approach is needed. Such a search for a holistic view and diagnosis, combining disciplines, triggered us to make use of the discipline of all disciplines: philosophy (Strauss, 2009), to address these limitations of TQM and BPR. In this chapter, we therefore intend to focus on resistance to standards in a broad and fundamental way by taking a philosophical approach.

## **Foucault and ISO 9001**

Philosophers that studied man in relation to power systems include Michel Foucault and Jürgen Habermas. Both Foucault and Habermas criticise the historical transformations of modern forms of rationality (Kelly, 1994, p. 372). Foucault did not develop a complete theory but rather studied several domains that have been shaped by power relations (Foucault, 1976, p. 109). His objective was to create a history of different modes by which human beings are made subjects (Foucault, 1982, p. 208). Foucault (1977) studied the domain of torture, punishment, and prisons which can serve as an example for other systems of anonymous power. The emergence of the prison marks the institutionalisation of the power to punish. Traditionally, the focus was on the body, with the ultimate punishment of public torture and execution, to be seen by all almost as a triumph (Foucault, 1977, p. 34). This changed in punishing the soul instead, following a penal judgement (Foucault, 1977, p. 19). This soul is shaped by methods of punishment, supervision and constraints (Foucault, 1977, p. 29). The object of control is 'the economy, the efficiency of movements, their internal organisation. (...) Finally, there is the modality: it implies an uninterrupted, constant coercion, supervising the processes of the

activity rather than its result and it is exercised according to a codification that partitions time, space, movement as closely as possible. These methods allowed the meticulous control of the operations of the body, which assured the constant subjection of its forces and imposed upon them a relation of docility-utility, might be called 'disciplines' (Foucault, 1977, p. 137). The success of disciplinary power derives from the instruments of hierarchical observation (eyes that must see without being seen), normalizing judgement (a combination of comparing, differentiating, hierarchising, homogenizing and excluding), and examination (Foucault, 1977, pp. 170-187). Examination transforms the economy of visibility into the exercise of power. (...) It is the fact of being constantly seen, of always being able to be seen, that maintains the disciplined individual in his subjection (Foucault, 1977, p. 187). The examination that places individuals in a field of surveillance also situates them in a network of writing; it engages them in a mass of documents that captures and fixes them (Foucault, 1977, p. 189). The examination opens up the possibility of the constitution of a comparative system of measurements, description and registrations (Foucault, 1977, p. 190). It makes each individual a 'case'. The individual may be described, judged, measured and compared to others, in his very individuality; and it is also the individual who has to be trained or corrected, classified, normalised and excluded, etc. (Foucault, 1977, p. 191). Finally, the examination is at the centre of the procedures that constitute the individual as effect and object of power and as effect and object of knowledge (Foucault, 1977, p. 192). Public execution was replaced by penal detention as a calculated technique for altering individual behaviour (Foucault, 1977, p. 264).

Foucault refers to Bentham's (1838) Panopticon: a prison in the form of a circle, with a tower in the middle. The prisoners live in cells in this circle. These cells have barred windows in the outside of the building and in the inside of the circle so that the supervisors in the tower can observe them. The prisoners, however, cannot see whether they are observed or not. 'The surveillance is permanent in its effects even if it is discontinuous in its action. (...) The power relation is independent of the person who exercises it' (Foucault, 1977, p. 201). 'The side walls prevent each individual from coming into contact with his companions. He is seen, but he does not see; he is the object of information, never a subject in communication' (Foucault, 1977, p. 200). The Panopticon was also a laboratory; it could be used as a machine to carry out experiments, to alter behaviour, to train or correct individuals (Foucault, 1977, p. 203). 'Whenever one is dealing with a multiplicity of individuals on whom a task or a particular form of behaviour must be imposed, the panoptic schema may be used' (Foucault, 1977, p. 205). Moreover, the level of use may be extended from individuals to organisations: 'The seeing machine was once a sort of dark room into which individuals spied; it has become a transparent building in which the exercise of power may be supervised by society as a whole' (Foucault, 1977, p. 207).

The prison system has not been successful. 'Prisons do not diminish the crime rate, detention causes recidivism, the prison produces delinquents, encourages the organisation of a milieu of delinquents' (Foucault, 1977, pp. 265-268). As a result, initiatives to reform of the prison system have been taken at the national level. Illegal activities remain but society uses them or even needs them to show the limits of legality and to make illegality less dangerous. 'The carceral 'naturalizes' the legal power to punish, as it 'legalizes' the technical power to discipline' (Foucault, 1977, p. 303). The prison is 'linked to a series of 'carceral' mechanisms



which seem distinct enough – since they are intended to alleviate pain, to cure and to comfort but which all tend to exercise a power of normalisation’ (Foucault, 1977, p. 308).

Foucault is the co-founder of the Groupe de l’Information de les Prisons, a prison information group that provides a channel for prisoners to voice their concerns, and such protest is, in fact, Foucault’s “solution” for those who suffer from the exercise of power. He “walked his talk” by joining students in occupying administration buildings and fighting with the police.

An ISO 9001 quality management system is a system of control to assure that the organisation’s products (which may include services) meet the expressed or unexpressed requirements of the customer. This control is achieved through process management with a set of measures including policy development and deployment, written procedures, registrations, measuring of product characteristics against requirements, measuring customer satisfaction, corrective and preventive actions, internal and external audits, and management reviews. The ‘human resources’ are managed by providing them education. Employees have to behave in the way prescribed in the written instructions and procedures of the quality management system. Manders (2015, chapter 4) investigated the involvement of individual employees in their company’s ISO 9001 system. She found a diversity of attitudes towards the system, from very negative to very positive, with some employees showing the kind of resistance described by Foucault. Others had a positive attitude to the system, acknowledging its usefulness and perceived ease of use. Only those who had a specific role within the system, for example, internal auditors, were also involved in improving the system, provided they felt responsible to do so. The manager or management team is not the ‘sovereign king’ of the organisation but, instead, part of the system. Management observes (management review) but is observed as well through internal and external audits.

We can see the similarities with Foucault’s systems. Once established, the quality management system exercises normalising power. It is an instrument of discipline. This power is exercised rather than possessed, it comes from the bottom up rather than from the top to the bottom, and it is not repressive (backed by sanctions) but productive (Kelly, 1994, p. 374). The prescriptions of behaviour related to described processes and the subsequent measurements, evaluations and audits make employee behaviour transparent. This does not mean that employees cannot take any initiative. On the contrary, but such initiatives are prescribed by the system as well because it defines their responsibilities, authorities and tasks which include corrective and preventive actions and even improvements of the quality management system. In forcing them to further strengthen the system, ISO 9001 even goes a step further than the old prison systems. Anyhow, the employee as well as his manager is captured by the system. It is not surprising that they may have feelings of resistance. At the end of the day, Foucault would have advised them to escape. This is indeed what Gouldner (1954) already observed: a discrepancy between official procedures and actual behaviour. This discrepancy is problematic for organisations striving for quality or being more or less forced by customers or government to implement ISO 9001. So Foucault helps us to understand resistance to standards but does not offer an acceptable solution.

### **Habermas and ISO 9001**

Habermas (1987) distinguishes between ‘System’ and ‘Lifeworld’. The lifeworld is ‘that province of reality which the wide-awake and normal adult simply takes for granted in the

attitude of common sense. By this taken-for-grantedness, we designate everything which we experience as unquestionable; every state of affairs is for us unproblematic until further notice' (Habermas, 1987, p. 130). 'The lifeworld is the intuitively present, in this sense familiar and transparent, and at the same time a vast and incalculable web of presuppositions that have to be satisfied if an actual utterance is to be at all meaningful, that is, valid *or* invalid' (Habermas, 1987, p. 131). Systems, on the other hand, are characterised by economy (resources), polity (goals), pattern-maintaining systems (values) and integrative subsystems (norms) (Habermas, 1987, p. 244). Society is in crisis because of the "colonisation" of the lifeworld by systems (Habermas, 1987, p. 394). Systems are fully rationalised and are related to material reproduction, rationality of money and power, and achievement of results. Principles of rationalisation are efficiency, calculability, predictability and control.

Conflicts are about defending and restoring endangered ways of life. (...) The new problems are related to quality of life, equal rights, individual self-realisation, participation, and human rights (Habermas, 1987, p. 392). The lifeworld consists of 'communicative action' and therefore Habermas proposes such communicative action that 'decodes the deformations of the lifeworld' (Habermas, 1987, p. 403). Communication has three functions: (1) reaching understanding (communicative action serves to transmit culturally stored knowledge), (2) coordinating action (it serves the fulfilment of norms in the form of social integration and establishment of solidarity), and (3) socialising actors (it serves the formation of personality structures) (Habermas, 1987, pp. 63, 137). The concept of consensus is important: 'participants in communication reach an agreement concerning the validity of an utterance; agreement is the validity claim the speaker raises for it' (Habermas, 1987, p. 120).

Implementing TQM or a quality management system based on ISO 9001 can be regarded as the introduction of a 'system' in the lifeworld of an organisation, and consequently, it is logical that feelings of resistance may surface. Organisations are more than just units for material reproduction; they are important for the identity and wellbeing of individuals. Habermas would protest against ISO 9001 implementation and in particular against the reduction of human beings to 'human resources'. If such a system is inevitable, Habermas would probably advise the lifeworld to penetrate into the system. This should be done through communicative action. Employees should discuss and negotiate all elements of the quality management system and the necessity of the system itself, taking into account both the external (market) situation and the lifeworld within the organisation. If they reach consensus, the system will better satisfy their needs or the system is no longer needed because common understanding provides an alternative way of coordination.

If Foucault had been confronted with this fictitious advice, he would have argued that the necessity to communicate and arrive at consensus becomes an element of the system. 'The problem is not of trying to dissolve them [relations of power] in the utopia of a perfectly transparent communication, but to give oneself the rules of law, the techniques of management, and also the ethics, the ethos, the practices of the self, which would allow these games of power to be played with a minimum of domination' (Foucault, cited by Kelly, 1994, p. 391). Habermas focuses on moral-practical relations between modern, autonomous subjects but that regime exists alongside a second regime, analysed by Foucault, determined by practices, institutions, and knowledge (Kelly, 1994, p. 376). Therefore, their approaches are complementary in their

application to ISO 9001, and in both cases, there is a conflict between freedom and control. The organisation's management, or even the entire organisation, uses its freedom to opt for a (quality management) system, but, once established, this system restricts individual freedom, including that of the management.

### **Addressing the conflict between freedom and control**

Freedom and control are essential values in Western culture. Goudzwaard (1979) argues that freedom and control are the two main ideals of Humanism which originate from the Renaissance. Exercising individual freedom includes controlling one's environment including the creation of systems of control but this may affect the freedom of other people. How can this problem be solved?

Erasmus, one of the founding fathers of humanism, talks about individual freedom in a way uncommon in our days: 'Nobody obeys more (...) than he who has drunk in the Spirit of Christ and starts getting free' (Allen, 1913, p. 374). He links freedom to Christianity. The Christian source document, the Bible, addresses the tension between freedom and control but uses different terms. The basic assumption in Renaissance and Humanism is man's autonomy, whereas man, according to the Bible, was created and, therefore, is in a subordinate position to his Creator. Man has been given freedom, but this freedom gets a purpose. 'Everything is permissible, but not everything is beneficial or constructive' (1 Corinthians 10:23). Man has been set free to love his neighbours and to look after creation and develop culture. His freedom includes the option to choose to go against his Creator. The latter is called 'sin' which means 'miss the goal'. Sin is related to autonomy: deciding for yourself what to do instead of being dependent on your Creator and respecting the structures of creation and God's commandments. So in the positive sense, man's freedom gets a purpose of serving, which includes the creation of artefacts, organisations and systems, and thus measures and systems of control. Such control, embedded in the attitude of serving neighbours, is claimed to be of benefit to other people and to creation. However, sin affects behaviour and man, seeking his autonomy, may use his freedom to control in a way that affects his environment. Such behaviour may lead to a system of control in which man is both offender and victim. This may include systems at societal level. The first biblical example is the tower of Babel, it has numerous similarities with the systems described by Foucault (Ellul, 1970). Foucault provides a thorough analysis of such systems and its inherent reasons for resistance. However, his view is too negative. Reality shows a mixture of positive and negative developments, of emancipation and of oppression.

Standards imply control, which may result in organisational benefits but can cause employee resistance as well. We will now explore the feasibility of a Christian-philosophical approach to the control that is inherent to standards. Again, we take the case of ISO 9001 implementation and explore if such an alternative way of control may avoid resistance. This topic can be addressed using ideas by Dooyeweerd.

### **Dooyeweerd and the freedom versus control issue**

The Christian philosopher Herman Dooyeweerd (1955; 1957; see for an introduction Basden, 2010 and Kalsbeek, 1975) addresses the issue of freedom versus control more indirectly (Basden, 2004). Dooyeweerd understands 'freedom' in another way than common in our

culture. Freedom should be ‘meaningful’, otherwise it is no real freedom. For instance, we are free to design a car with square wheels, but it makes little sense to do so. Meaningful freedom constitutes response to norms. Such norms apply to entities, such as organisations, and to aspects. We will focus on the diversity of aspects. Freedom is ‘free to’ rather than ‘free from’: free to do something meaningful, which our Creator granted us. For instance, if we had not been given the ability to communicate in common symbols, we would have had no freedom in that area (Basden, 2004).

### **Aspects related to ISO 9001 / TQM**

We can distinguish several aspects of phenomena in reality. A table, for instance, may have four legs – a numerical aspect. It may have a certain economic value – an economic aspect. It may be beautifully designed – an aesthetical aspect. Dooyeweerd lists 15 aspects which are distinct ways in which reality can be meaningful and good, and can exist and occur. These are: the numerical, spatial, kinematic, physical, biotic (organic life), psychic (sensitive), analytical (logical), historical, lingual, social, economic, aesthetic, juridical, ethical and pistic (trust, faith) aspect. There are laws related to each aspect that should be honoured. For the first six aspects, these are natural laws which are generally obeyed without opposition. For instance, mathematical laws of adding, subtracting, multiplying, etc., apply to the numerical aspect. For the other nine aspects, these ‘laws’ are normative principles that man, in his freedom, can obey or violate, unintentionally (not being aware of certain normative principles) or intentionally. Much of the dissatisfaction with TQM or ISO 9001 quality systems may be explained by violating the ‘human’ side of quality management. This will not come as a surprise. Therefore, we examine two less evident aspects: the lingual aspect and the pistic aspect.

According to Dooyeweerd, the lingual aspect concerns symbolic signification. It is related to more than just language. For example, reserving the best parking place, next to the company’s main entrance, for the general manager is a form of non-verbal communication that reveals something about the organisation’s internal relationships. According to Dooyeweerd, each aspect has a normative component. Clarity is the normative component for the lingual aspect. In quality management practice, the lingual aspect is related to communication about establishing and using the system, and the system’s description in the form of quality handbooks, procedures, and instructions. Violating the lingual aspect is a source of unnecessary dissatisfaction. Examples include:

- The organisation’s management that does not clearly communicate their quality management policy or show their commitment. Perhaps there is a well-written and verbally expressed policy, but the absence of top management at meetings of the steering committee for quality, signals a lack of commitment.
- Quality management systems that are designed by an ‘expert’ such as the organisation’s quality management officer or an external consultant, instead of resulting from a joint effort of all employees. The latter has proven to be better (Brown et al., 1998; Mahadevappa and Kotreshwar, 2004). Involvement creates enthusiasm for quality management and lack of involvement is a source of dissatisfaction. ‘Listening to employees’ can be improved, for instance, by using interview techniques.
- The quality system’s documentation that is often an impressive folio in the cupboard instead of a practical guide for the employees working on the shop floor. Sometimes,

integration of a procedure into, for instance, software applications may replace a written instruction. In other cases, the process descriptions can be improved using clear text, or flow charts.

- One-way communication. Using feedback systems can eliminate dissatisfaction and improve customer service.

The pistic aspect is not related to a religion but to the possibility to believe. Reliability is the normative principle for this aspect. The organisation's mission statement is its 'confession' and its quality policy should be in line with this, otherwise both are untrustworthy. To be reliable, the organisation's actions should support its policy. In order to achieve this, quality management is needed. It is characterised as: 'say what you do and do what you say.' (Grimes, 2003, p. 11), sometimes with the addition 'and (be in a position to) prove it' (Dale, 2007, p. 293). Quality assurance should ensure that the organisation is able to promise only what it is able to fulfil, and, once promised, to deliver what was promised. Reliability can be honoured by a certification audit. However, is the certificate itself reliable? The above findings suggest that an ISO 9001 system can have little impact, no impact or a positive impact, and the main reason for this difference is the internal motivation. However, this implies that it is possible to achieve a certificate for a quality management system that has little or no added value. This questions the trustworthiness of the certification. Even ISO's own journal reports about lack of trust. An Italian survey revealed that 45% of the quality management systems of suppliers of an energy company did not sufficiently conform to the standard (Nicoloso, 2007). This problem does not only affect the energy company. Employees of the unreliable suppliers may feel uncomfortable with the window-dressing in their organisation and may prefer to have reasons to be proud of their employer.

The examples of these two aspects show that these normative 'laws' do not reflect an esoteric activity but common wisdom and issues addressed in professional and scientific literature. However, it is difficult and time consuming to examine all 15 aspects of an entire system. Therefore, the empirical part of our study will focus on one process only instead of studying the entire implementation of a quality management system. We will address the management decision to standardise one of the processes to enhance efficiency, and examine employee resistance, if any, to this standardisation.

## **RESEARCH APPROACH**

During 2003 and 2004, we developed an approach based on the philosophy of Dooyeweerd to analyse a standardisation project in the company Voestalpine Polynorm. We offered solutions and recommendations. Six years later, we evaluated the results of this approach, and focused on how resistance to standardisation developed during the years. We make a case reconstruction and then analyse the case using quality management literature and the ideas of Foucault, Habermas and Dooyeweerd (see Figure 1).

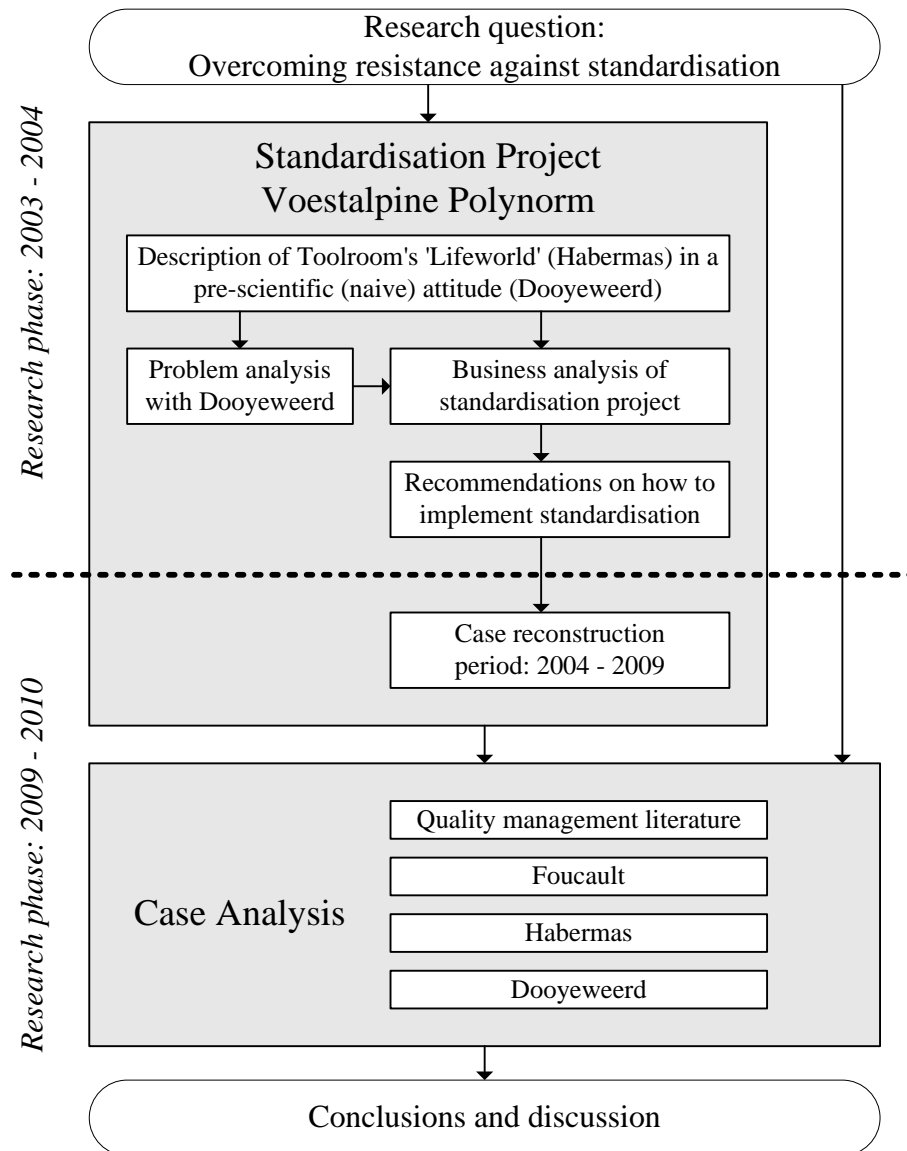


Figure 1. Research approach

During 2003 and 2004, we applied Dooyeweerd's philosophy in the real-life case of a standardisation project in a company. Scientific research tends to focus on one or a few aspects, running the risk of remaining unaware of other aspects and not seeing reality as it is. Dooyeweerd emphasises the importance of what he calls 'naïve experience': an unprejudiced experience of the situation, similar with what Habermas (1987, p. 130) names the taken-for-grantedness typical for the 'lifeworld'. Therefore, we started our research with a 'lifeworld' approach which is also common in social-constructivist research. We evaluated the situation by being on the shop floor, talking informally to people involved in the process and conducting unstructured interviews. We further analysed the situation by examining the organisational embedding of the standardisation project, and the various aspects described by Dooyeweerd. For this purpose, we studied internal documents, observed behaviour and held interviews. This fieldwork, carried out in 2003, resulted in a report, which describes and analyses the situation and provides recommendations for the company (Haverkamp, 2004, summarised in Haverkamp, 2006). In 2009 and 2010, we conducted ten new interviews, mainly with people also interviewed in 2003, and studied new internal documents in order to see what had changed

since then. As part of the interview protocol, we developed a measurement protocol for identifying, selecting, and accessing sources of evidence, and for generating a valid and reliable score for each of the variables, which were measured through the interviews. We measured the following concepts: efficiency of work in terms of time, work standardisation in terms of implemented standard working methods, and satisfaction. In particular, we addressed the concept of satisfaction related to the standardisation initiatives. The degree of satisfaction was defined as the extent to which workers perceived their daily work related to the project as satisfying, and refers to a value attributed to work by the workers. It is a characteristic of people's opinions, and the value of this variable ranges from 'not satisfying at all' to 'very satisfying'. The interview evidence was recorded and transcribed, and we analysed and evaluated the contents of these transcriptions. We were able to graphically visualise the (relative) degree of resistance to the standardisation activities in time (see Figure 4). The interviewees reviewed the case reconstruction and visualisation of resistance in time and agreed with our description and analysis.

Below, we first describe the company, the department, the problem and the reasons for standardisation. Then, we give a chronological description including the extent to which our recommendations were implemented, and we relate resistance to the phases of the project. Next, we analyse the case and discuss whether Dooyeweerd's approach was feasible to tackle the standardisation problem.

## **STANDARDISATION PROJECT VOESTALPINE POLYNORM**

### **Case company and department**

The case company Voestalpine Polynorm Automotive in Bunschoten, the Netherlands, develops and produces automobile body parts, such as doors, bonnets and roofs for the automotive industry. The company is a preferred supplier of major automobile manufacturers in Europe. The production requires specific tools that determine the shape of the parts. These tools are made, maintained and, if necessary, repaired or adapted by the company's Toolroom. Professional technical skills are a prerequisite for accurate 'formability', the degree in which a sheet-metal is formed in the required shape.

The parts are made by a process called deep drawing, in which a punch forces a flat sheet-metal into a die cavity. A sheet-metal blank is placed over a die opening, and is held in place with a blank holder. The punch travels downward and forces the blank into the die cavity. The important variables in deep drawing are the properties of the sheet metal, the ratio of blank diameter to punch diameter, the clearance between punch and die, the punch radius and die-corner radius, the blank holder force, friction, and lubrication (Kalpakjian, 1995, p. 472). Especially deep drawing of non-symmetric parts can present significant difficulties in practice (Kalpakjian, 1995, p. 476). For example, various regions of a part undergo different types of deformation during drawing. In order to avoid sheet metal during forming, it is important to consider and control all relevant factors. In our research, we examined the Toolroom's activities regarding the control of these relevant factors of formability in the deep drawing process.

Voestalpine Polynorm had a certified quality management system based on the international standard ISO TS 16949 (the predecessor of IATF 16949:2016), which is an extension of ISO 9001 with additional requirements for the automotive supply chain. One of the additional prescriptive requirements of this standard is that management shall review the product realisation processes and the support processes to assure their effectiveness and efficiency (ISO, 2009a, p. 7).

### The problem

The Toolroom had already successfully implemented a standardised process for formability, as part of the quality management system. As a result, the lead times in getting tools ready for production had decreased and scrap percentages had reduced significantly. However, the process description (procedure) allowed different working methods and, indeed, the teams differed in the method they used. Management thought that they could achieve more efficiency by standardising working methods. They would modify the standard as soon as further improvements to the working methods were found. It would reflect ‘best practices’, see Figure 2.

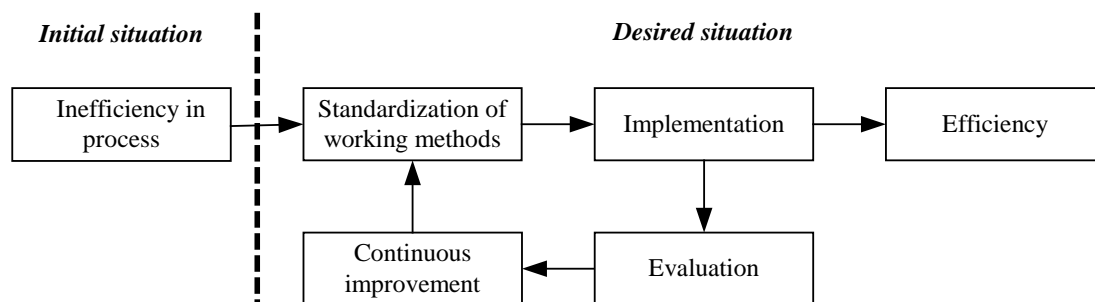


Figure 2. Standardisation project in Toolroom of Voestalpine Polynorm

Interestingly, this project can be seen as a standardisation project in two ways. It is part of the company implementation of an international standard, but it also leads to the development and implementation of a new in-company standard. A researcher (first author of this chapter) was asked to investigate how the working methods in the Toolroom could be standardised.

### First impression: resistance to intended standardisation project

The researcher joined the Toolroom for 10 months and was accepted by the workers immediately, partly because of his technical background. The first impressions and rather informal interviews with 12 employees (Toolroom manager, shift leader, team leaders (4), toolmakers (3), welder, project leader and formability specialist), revealed that the older employees expressed more resistance to the standardisation initiative than the younger generation. The following quote of a very experienced toolmaker is exemplary for the older generations ‘Craftsmen are not clonable’ (Haverkamp, 2004, p. 26). The younger generation, both toolmakers and team leaders, were more positive about standardisation. ‘Our methods can and need to be standard; we could benefit considerably. However, it is important that everything remains understandable for everybody. Everything needs to be explainable.’ (Haverkamp, 2004, p. 27).

### Aspectual analysis



Next, the researcher analysed the organisational embedding of the process and the aspects more systematically. The aspectual analysis was mainly based on many interviews on the shop floor, logbooks, internal documents, and observations (during meetings and on the shop floor). The functioning of the Toolroom was analysed using each of Dooyeweerd's 15 aspects. For example, the process of tool reparation relates to the numerical aspect in the form of several different working methods. The tools are located in the Toolroom (spatial aspect) and consist of a punch which travels down (kinematic aspect) to transform a blank (physical aspect) into a die cavity, in accordance with ergonomic standards (biotic aspect). However, standardisation of this process may lead to resistance (psychic aspect) and requires an investigation of practices and the choice of a best practice (analytical aspect). The current standard was developed and implemented in the past (historical aspect). However, it was expected that a written (lingual aspect) standard for working methods, implemented in an acceptable way (social aspect), would lead to more efficiency (economic aspect). The description has a certain format (aesthetical aspect). It should meet customer specifications (juridical aspect). The Toolroom's mission (pistic aspect) is to serve customers (ethical aspect) in a flexible way. Next, the researcher determined to which extent the functioning was in line with the specific (normative) 'laws' for each aspect.

A similar analysis was made for the change process and for the desired (standardised) situation. For each aspect, the researcher predicted the positive and negative consequences of process standardisation by investigating all possible changes in functioning in relation to the corresponding 'laws' of all aspects. For example, standardising existing working methods (numerical aspect) might lead to a more efficient way of working, which is in line with the norm of 'efficiency' in the economic aspect.

The aspectual analysis of the initial situation, change process and desired situation resulted in an overview of relevant aspects related to the research question. Although all aspects are relevant, some, for example, the psychic aspect were found to be more prominent, whereas others, such as the aesthetic aspect, were less apparent. The applicable normative requirements for each of these aspects should be found and honoured. From Dooyeweerd's point of view, this is a necessary condition for the success of the project. For example, the normative component of the analytical aspect is the ability to distinguish one thing from another and to abstract something from the concrete reality. Applied to the Toolroom, knowledge is required to be able to analyse a tool. Insufficient knowledge could (unconsciously) lead to a wrong analysis, which is an example of not functioning in line with the norms for the analytical aspect. Standardising a 'best practice' assumes that everybody has the same skills and knowledge to be able to 'analyse' according to this 'best practice'. The empirical data showed that this was not the case, and that more attention should focus on the analytical aspect. In a similar way, the researcher determined whether special attention was required for each aspect during the standardisation process. The following aspects needed special attention:

- Psychic aspect; in which the *motivation* of employees is crucial.
- Social aspect: in which the condition of true *respect* for each other is important.
- Lingual aspect; in which verbal and non-verbal *communication* is important.
- Pistic aspect; in which *trust and commitment* are important.
- Analytical aspect; in which homogeneous *knowledge* and *skills* are required.

- Historical aspect; in which *events and managerial behaviour in the past* partly explain current resistance to standardisation, and therefore need to be addressed.

Following Dooyeweerd, it is especially important to consider whether everything is in line with the normative requirements for these aspects in order to avoid resistance to the standardisation project.

Pragmatic business administration insights can help businesses to function in compliance with the normative requirements because these reflect experiences in what ‘works’ and what does not. The ‘norms’ in the psychic, social, lingual and pistic aspects can be understood and managed by insights about motivation. The ‘norms’ in the analytical aspect can be understood and managed by applying knowledge management concepts. Normative requirements in the historical aspect can be honoured by notions of willingness to change, see Figure 3.

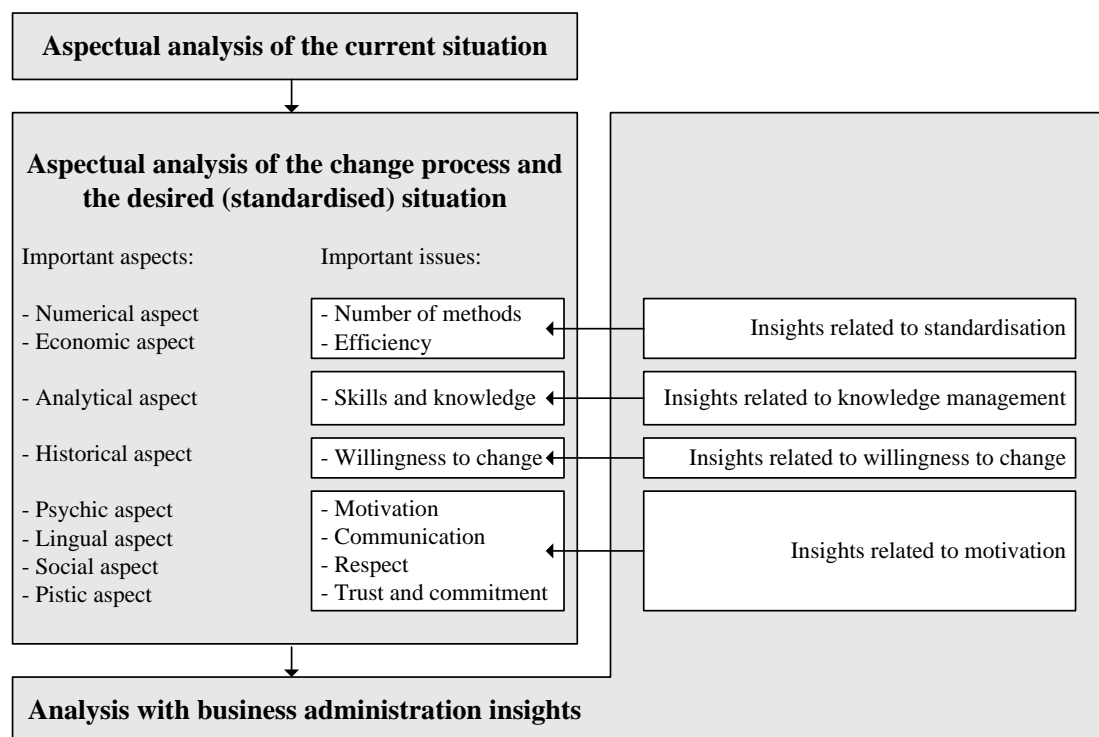


Figure 3. Problem analysis based on Dooyeweerd's philosophy

### Business analysis of the standardisation project

We investigated the relation between the numerical (number of methods) and the economic aspect (efficiency) with insights related to standardisation. Notions such as ‘standardisation’, ‘standards’ and ‘continuous improving standards’, as described in the problem field, were applied to the Toolroom. We used the ideas of Nakamura (2000), who sees continuous improvement as one of the key concepts of in-company standardisation. We applied a model of Slob and De Vries (2001) to understand how such standards can be developed. Furthermore, we determined how these standards can be developed and maintained, based on Simons and De Vries (2002), Kondo (2000) and Imai (1986).

In order to function in line with the norms in the analytical aspect in the standardised situation, knowledge management is required; employees first need to learn from each other. Different types of knowledge apply: implicit and explicit (Nonaka, 1994), and subject, method, social and acting knowledge (Sprenger & Ten Have, 1996). We used Buckler's model for learning to understand learning as a continuous process – a prerequisite for the Toolroom. Buckler (1996) sees learning as a process which requires three ingredients: focus, a stimulating environment and the right techniques. Because Buckler does not distinguish the different types of knowledge that need to be transferred, we used the notions of knowledge conversion (Nonaka, 1994) to get insight into the 'how' of learning. Nonaka distinguishes four types of knowledge conversion: socialising (from tacit knowledge to tacit knowledge), internalising (from explicit to implicit), externalising (from implicit to explicit) and combining (from explicit to explicit). Mom et al. (2002) conclude that there are three phases in knowledge conversion processes: decision, transfer, and integration. Also according to Buckler (1996), learning requires a transition through different phases or stadiums (ignorance, awareness, understanding, commitment, enactment and reflection). We applied these insights in our recommendations for the Toolroom.

The psychic aspect relates to understanding and managing the feelings of employees during the standardisation process. In order to function in line with the psychic norms, people should remain (or become) motivated. Motivation originates in the introduction and unfolding of human aspects in daily work, such as creativity (the pleasure of thinking) and sociality (the pleasure of sharing things with colleagues) (Kondo, 1996). We applied this vision to the Toolroom.

The historical aspect relates to willingness to change. This willingness stems from employee motivation, whereas resistance to change originates from incomprehension regarding what, why and how management wants to do something (Wissema et al., 1991). Thus, in combination with Kondo's findings, the success of standardisation in the Toolroom depends on the willingness to change, which in turn depends on the amount of attention on the human aspects in this process.

This conclusion is in line with Dooyeweerd – all norms in the 'human aspects' need to be honoured to function successfully. In addition to the findings of Wissema et al. (1991) and Kondo (1996), Dooyeweerd's philosophy helped us to describe exactly *which* human aspects needed special attention.

## **Recommendations for implementation**

We concluded that the Toolroom could benefit from standardising their working methods, but that the organisation was not fully prepared for the proposed standardisation project. First, the above-mentioned insights (described in detail in the report (Haverkamp, 2004, pp. 91-134)) were needed to help the Toolroom to function in line with the norms of the indicated aspects. Therefore, the researcher made the following recommendations to Toolroom's management:

- Establish a common goal and vision. The purpose of the standardisation needs to be crystal clear and should be communicated regularly (lingual aspect). This is important for an effective learning process (analytical aspect), motivation (psychic aspect) and the willingness to change (historical aspect).

- Invest in mitigating individual differences in relevant knowledge and skills (analytical aspect), because this allows all employees to meet agreed-upon standards.
- Strengthen social knowledge through which employees can learn from each other (Sprenger & Ten Have, 1996). Social knowledge gives insight in the communicative processes and is required to support and coach one another (analytical aspect). It gives access to the knowledge others obtain. Awareness and understanding of the need to learn are fundamental for this (Buckler, 1996). A decentralised and informal structure stimulates the development of social knowledge.
- Stimulate employees to express (verbally or non-verbally) their ideas, concerns or feelings about the standardisation project and give them feedback (lingual aspect). This increases understanding (analytical aspect) and, as a result, commitment (pistic aspect) and action.
- Pay attention to commitment (“Yes, we can”) (psychic aspect).
- Give employees time to get used to the idea that change is needed (historical aspect).
- Be flexible – employees need freedom to influence changes in their work and want to be taken seriously, so adjustments during the process should be possible. This increases involvement (social aspect) and commitment (pistic aspect).
- Adopt a decentralised approach with a clear project structure (historical aspect).

### **Case reconstruction 2004-2009**

During the last quarter of 2009 and the beginning of 2010, we investigated if and how our recommendations had been implemented, and whether there had been any resistance among staff. We interviewed the Toolroom manager who described the changes and activities since 2004. The manager started the change project just after the researcher had left the company. The recommendations were implemented implicitly rather than explicitly and systematically. The Toolroom manager hired a consultant who applied a human-centred approach, founded in social constructivism. She did not receive the researcher’s report with analyses and recommendations, and started from scratch and interviewed people again to gather data. She focused on knowledge management rather than on standardisation. However, part of this knowledge management was to make implicit knowledge explicit (Nonaka and Takeuchi, 1995) with the intention to use this explicit knowledge repeatedly, which is standardisation as well (De Vries and Van Delden, 2006). Important elements of her approach were: how to learn from each other, how to make implicit knowledge explicit, how to write down practices, and how to standardise and implement a best practice.

The start-up phase of the project involved examining the working methods in the Toolroom. The consultant arranged workshops and investigated how people perceived their job, which other departments needed to be involved and what was important to the employees. Central questions were ‘who’ ‘what’, ‘where’, ‘why’ and ‘how’. Other questions included ‘what are we good at?’, ‘what do you think is important?’, ‘when is standardisation successful?’ and ‘how can you contribute to the project?’ The employees expressed their expectations and points of views, after which a common view was created by and for the Toolroom.

Next, an abstract level content of the standard was defined through mind mapping techniques. However, the project became much more extensive and complex than initially foreseen due to the company’s ambition to further increase performance and lower cost because of fierce

competition in the automotive market. Instead of a standardisation project, it became a project to transform the Toolroom in a streamlined and mature organisation, in which working, learning and innovating were to be key elements. The more complex project continued with an emphasis on knowledge management. Knowledge ‘pilot production teams’ were formed and ‘experts’ per specific area were nominated to produce teaching content to educate their colleagues. The teaching materials could be seen as standards. However, it was not successful because even the motivated leaders of the pilot teams did not understand the structure and complexity of the project. The rules and guidelines of the project were too complex and vague and, in their perception, unnecessary and therefore ineffective. The external consultant failed to clearly explain the objectives of the project, partly because the manager wanted to restrict her contact with Toolroom employees. As a result, the employees lost confidence and enthusiasm and no longer supported the project. Shortly afterwards, the external consultant was replaced by an internal project leader. This new project leader, a professional and experienced teacher, had other (didactic) ideas regarding the project. He discontinued the trial with the pilot production teams and tried to implement his own views and insights. However, Toolroom management did not support his initiatives, and consequently, the project made very little progress.

However, Toolroom employees acknowledged the need for more efficiency because of increased international competition. Together with one of production teams, the new project leader started bottom-up activities in developing the standard in a way he thought was right. According to the production team, the manager was not aware of this and they pretended to act in line with his original ideas in case he suddenly attended one of their meetings. This ‘dramaturgical compliance’ (Van Kemenade et al., 2011) continued until the manager left in April 2009. From then on, Toolroom employees openly continued their standardisation activity. They decided to keep it simple and defined three levels of craftsmanship. They used pictures rather than text in their descriptions. Training was provided group by group instead of the whole department at once. As a result, the lead time for writing these knowledge standards decreased considerably.

### **Resistance during the standardisation project**

In this chapter, we analysed resistance to standards by applying the philosophical ideas of Foucault, Habermas and Dooyeweerd. In the empirical part of the chapter, we focused on the standardisation process at the case company Voestalpine Polynorm. We used insights from our philosophical analysis in our recommendations to the company. Six years later, we evaluated the results of this intervention by analysing internal reports related to the project and by conducting six in-depth interviews. These interviews had an ‘open’ character and were aimed at retrieving real feelings and opinions from the respondents. Based on a systematic questionnaire, we measured whether (1) the initial philosophical diagnosis of the problem field and the practical conclusions and recommendations were effective and adequate and (2) whether the Dooyeweerd approach of implementing company standards was effective in overcoming resistance to standardisation. The amount of resistance was determined by measuring the degree of satisfaction for each stage in the standardisation process. The objects of measurement were the evaluation of the project as formulated in the project management reports and the judgements, opinions and recollections of individual persons (face-to face in-depth interviews). Several ways of recording the interview evidence were applied. We used voice recording and made notes of verbal and non-verbal communication. The interview

evidence (comments, experiences and suggestions) was recorded and transcribed (reviewed and approved by the respondents). The content of these transcriptions and the project reports were analysed, evaluated and used for a reconstruction. Based on the evaluation and reconstruction, we could visualise the relative amount of resistance during each project phase (Figure 4). This tentative visualisation was approved and confirmed by the respondents.

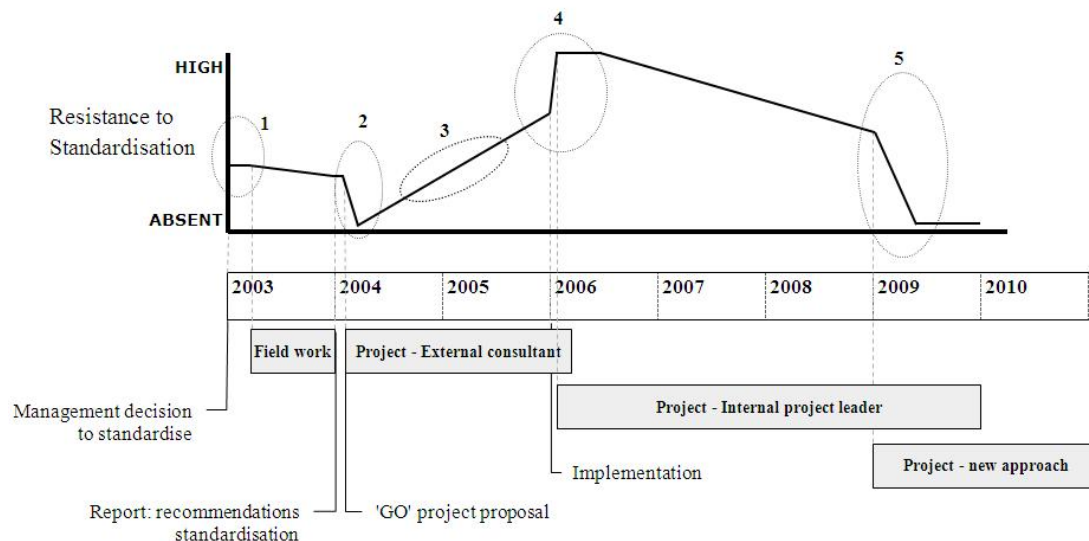


Figure 4. Resistance to standardisation 2003-2009

1. Initial resistance to the Toolroom management's plan to standardise.
2. Resistance decreases during the initial project phase.
3. Resistance increases during the project.
4. Resistance peaks during the phase of implementation of the standard.
5. Resistance decreases in the final stage of the project.

We now explain these five changes in resistance.

(1) In 2003, particularly older employees were unhappy with the management decision to standardise. The subsequent involvement of the researcher reduced this resistance slightly.

(2) The project that started in 2004 had a multi-sided approach. Implicitly, most of the researcher's recommendations were applied. A common goal and vision were established in the workshops, the purpose was clearly communicated, and knowledge management became an (important) element of the project. Everyone understood the need to change, the project was managed on commitment, and a gradual implementation strategy was developed in which the role of the employees seemed to be important. During this start-up phase, employees were enthusiastic, satisfied and, as a consequence, cooperative.

(3) However, the last recommendation was not implemented. The project was not decentralised or clearly structured. The project team changed its bottom-up approach into a top-down approach in which several of the other recommendations (unintentionally) were ignored. It developed a project structure which was only clear to the team itself. The common goal and vision became unclear and the standard became too complex. The possibilities for employees to propose or make adjustments seemed very limited, and feedback and communication were

lacking. As a consequence, key employees lost confidence and enthusiasm, their commitment decreased, and resistance to the standardisation initiative grew.

(4) Resistance reached a peak during the implementation phase. Employees no longer supported the project and the standard was not implemented.

(5) However, team leaders were convinced that the Toolroom could benefit from standardisation. After a while (in Figure 4: between 4 and 5), a small team started to convert implicit practical knowledge into explicit knowledge in the form of a standard. By providing employees with standard packages of knowledge, it was assumed that the tool maintenance process could be made more efficient. The implementation of this new standard was successful. The standard was easy to understand and pictures rather than text were used. Communicating about the relevance of the standard and verifying whether it was understood became important elements. Moreover, the standard was now seen as a new way to approach a certain problem, rather than a prescribed way to control the behaviour of the toolmakers. As a result of standardising knowledge and skills, toolmakers automatically adopted the most efficient working method for similar problems. They were free to adopt other methods and were not forced to use the standard. As a result, in their perception the standard was not a limitation of their freedom, but a necessary tool to become mature craftsmen. The initial goal was achieved: efficiency in terms of quicker repair times and shorter lead times to get tools ready for series production.

## **CASE ANALYSIS**

In this section, we analyse the case and in particular the five events that mark changes in resistance by using standardisation and quality management literature and by applying the insights of the philosophers Foucault, Habermas and Dooyeweerd.

### **Standardisation and quality management literature**

As mentioned, most literature on the adoption and use of standards in a company ignores possible staff resistance to standards. Van Wessel's (2010) main message is that proper governance and management of standardisation projects in the phases of standard selection, implementation and use lead to success. The best practice for company standardisation provided by De Vries (2006) addresses policies, processes, facility management and funding, but does not include individual employees. In this sense, some studies related to management system standards (Boiral, 2003; Manders, 2015) are an exception. They notice differences between employees, whereas in our case, all employees share a certain amount of resistance, only age seems to make a small difference. Boiral (2003) and Manders (2015) interviewed employees and show patterns in employee perceptions but they do not provide an in-depth diagnosis of their resistance, and as a consequence, they cannot provide fundamental solutions. This in-depth diagnosis might be a research area for psychologists (Brehm & Brehm, 1981) but then the relation to standards management is missing.

In our case company, Toolroom management was highly motivated to start the standardisation project for economic reasons: they were convinced it could improve their competitiveness. Such motivation is a good starting point for achieving results. However, their commitment did not avoid resistance. Resistance grew, in particular, due to lack of communication. In line with

Brown et al. (1998) and Mahadevappa and Kotreshwar (2004), the initial enthusiasm and satisfaction disappeared because the normative requirements of the 'human' aspects, especially the lingual aspect, were violated.

Van Kemenade et al.'s (2011) findings are helpful in sharpening our diagnosis of resistance. They developed criteria for professionals' willingness to contribute to quality assurance. (1) A main reason for the initial resistance to standardisation was the limitation of the toolmakers' freedom. However, as we have seen in the aspectual analysis, there were more reasons for this initial resistance. It slowly decreased due to better communication. The absence of resistance in the start-up and final phase of the project (2 and 5) can be understood using Van Kemenade et al.'s prerequisites as well. The criteria were met both times, but in different ways. The growing resistance after the start-up phase (3 and 4) was because two of Van Kemenade et al.'s criteria were not satisfied: the rules and templates were too complex and needed to be followed strictly. This rigidity caused control, rather than freedom as the dominant factor during implementation. Moreover, there was a decrease in ownership by Toolroom professionals since the work was done by a small development team directed by an external expert. Since management was part of this development team, support for management decreased as well. Although Van Kemenade et al.'s prerequisites were met in phases 2 and 5, this was not sufficient to avoid resistance to the standard. An explanation is that Van Kemenade et al.'s prerequisites do not cover all of Dooyeweerd's (human) aspects. For example, Van Kemenade et al. do not mention the lingual aspect, which proved to be important in this case.

### **Foucault**

Foucault's findings on power systems can be used to analyse quality management systems such as the case company's ISO TS 16949 system (Van Veldhuisen, 1996) but for the employees in the Toolroom, it is not the system as such which is of interest but its impact on their department. Our case description shows that in line with the ISO TS 16949 (and its successor IATF 16949:2016) requirements, the Toolroom management intended to standardise processes on the shop floor. Employees were expected to behave according to predefined rules and guidelines. The plan to implement this (1) caused resistance. The more concrete the plan became (3 and 4), the stronger the resistance. The attempt to force production teams to use the standard (4) resulted in the strongest resistance. Foucault helps us to understand this resistance. Interestingly, the revolt against the standard is also in line with Foucault. The employees revolted against the proposed way of working and, finally, escaped from the 'system' by no longer supporting it. However, their voluntary decision to develop another standard (5) and the lack of resistance in phase 2 are not in line with Foucault.

### **Habermas**

Resistance to this standardisation project can also be understood with Habermas' insights. (1) The initial resistance in 2003 decreased due to communicative action. (2) The absence of resistance in the start-up phase can partly be understood by this communicative action as well. However, as mentioned earlier, this successful project start was not only dependent on honouring the normative requirements regarding communication. (3) Next, besides the



Toolroom's 'lifeworld', a 'system' was being developed which the workers perceived as questionable, it was not taken for granted in the attitude of common sense. (4) This system had to be implemented into the lifeworld of the Toolroom which resulted in strong resistance because it was seen as too complex and too theoretical. Apart from the lingual aspect, Habermas does not mention any of Dooyeweerd's other human aspects and these, as we have seen, in this case, the economic, analytical, historical, psychic, social and pistic aspects are important for success as well. On the other hand, it seems that violating the norms of only the lingual aspect, the one Habermas mentions, could be enough for the project to fail.

### **Dooyeweerd**

According to Dooyeweerd, all of the sides, or aspects, of the project are important and all corresponding normative requirements should be honoured. Our problem analysis using Dooyeweerd's philosophy showed which aspects required additional attention. This philosophical analysis was fundamental for the selected combination of business-administrational approaches and, as a result, the recommendations for standardisation. As we have seen in the systematic inventory of the Toolroom, not all the normative requirements of the (human) aspects were honoured, which explains the initial resistance to the standardisation plan (1). In the start-up phase (2), most of our recommendations were implicitly implemented. Attention focused on the 'human' side of standardisation. As expected, there was no resistance to the proposal and even the older employees were cooperative. However, soon these normative requirements were violated. Due to inadequate communication (lingual aspect) and ignoring the comments of the employees (social aspect), the motivation (psychic aspect) and trust (pistic aspect) in standardisation eroded. Also, commitment (pistic aspect) and the willingness to change to the unintelligible standard (analytical aspect) decreased dramatically (3 and 4). In the new project approach (5), all recommendations were implicitly implemented again. Instead of resistance, a form of standardisation was achieved in which the tension between control and freedom seemed to have been eliminated.

### **Common case analysis**

In general, the Polynorm case can be indicated as a small BPR activity that failed due to an overemphasis of the 'technical' aspects of the standardization project while having too little regard for the more 'human' aspects. Foucault and Habermas help us to understand staff resistance to the standardisation project. However, they fail to explain the initial lack of resistance and do not offer an acceptable solution to overcome resistance to the project. Habermas' call for communicative action and Foucault's advice to escape do not solve the conflict between control (of the development team) and freedom (of the production team).

The analysis based on Van Kemenade et al. and Dooyeweerd considers the economic necessity for standardisation which is ignored by Foucault and Habermas. According to Dooyeweerd, the economic aspect is the leading aspect for a company. 'Frugality in managing scarce goods' is fundamental for this aspect (Kalsbeek, 1975, p. 100, based on Dooyeweerd, 1955, p. 66). By planning and executing a standardisation project, Toolroom management acknowledged this. Toolroom employees also seemed to recognise the leading role of this aspect. Toolmakers perceived the quality management system as a 'necessary evil' which ensured that customers received the right products. Moreover, without ISO TS 16949 certificate, Voestalpine Polynorm

would be out of business. This explains both the absence of resistance and the strongest resistance in Figure 4 (2, 4 and 5). The strongest resistance occurred in phase 4 when Toolroom employees perceived the standard to be unnecessarily complex, ineffective, and therefore not in line with 'frugality in managing scarce goods'. The economic aspect also shows an additional explanation for the increasing resistance in phase 3. The company hired an external consultant who was unsuccessful in implementing the project. The employees felt they could have achieved more for the company without these extra costs.

The resistance during the project can partly be explained from a TQM perspective as well. For example, the case indicated that the resistance was low during the start of the project (Figure 4, phase 2) when employee involvement and management commitment were high; two major practices for a successful TQM approach. However, the increasing resistance in phase 3 is more difficult to explain from a TQM perspective. Management was committed and people were involved but key employees lost confidence in the project and developed resistance to the standardisation initiative. Unlike a diagnosis and analysis based on Dooyeweerd's philosophy, a TQM approach would not have been able to identify the required attention to, for example, the analytical and historical aspect during this project. TQM stresses the importance of attention to 'human aspects' but does not define which aspects and norms need to be fulfilled in order to be successful. A BPR approach is even less encompassing than a TQM approach and tend to under-appreciate the 'human aspects'.

We can conclude that the philosophy of Dooyeweerd provides a better explanation for (1) staff resistance to Toolroom management's plan to standardise, (2) the decreasing resistance when the recommendations based on Dooyeweerd's philosophy were implicitly implemented, (3 and 4) the increasing resistance when the 'laws' related to the aspects were increasingly violated and (5) the decreasing resistance in the final stage.

## CONCLUSION AND DISCUSSION

Standards can generate benefits but may cause resistance as well because they may impact human behaviour directly. This applies in particular to management system standards. The implementation of such standards in an organisation leads to process standardisation in the form of written procedures and work instructions. Resistance to this form of standardisation can be partly explained using standardisation and quality management literature. In particular, the prerequisites as formulated by Van Kemenade et al. (2011) appear to be useful.

The paradox of the benefits of standards and the resistance to them may be related to the fundamental tension between the poles of 'order' and 'freedom' in a social organisation. To get a deeper understanding of this issue, we applied some concepts of philosophers that study man in relation to power systems. We found that Foucault's analysis of systems and Habermas' notions of communicative action give us a deeper understanding of resistance, but their approaches are not of help in understanding the benefits of standards. Moreover, neither Foucault nor Habermas provide a solution for the tension between freedom and control, two essential ideals of Humanism. Exercising individual freedom includes controlling one's environment, and this may involve the creation of systems of control which may affect the freedom of other people. We explored how this problem can be solved by following Erasmus, one of the founding fathers of Humanism, in linking the notion of freedom to Christianity. In Dooyeweerd's Christian-philosophical approach, freedom is not absolute, but it should be

‘meaningful’, otherwise it is not real. Meaningful freedom constitutes response to norms. These norms can be related to (organisational and other) structures and to the 15 aspects in which ‘things’ (e.g., processes) function.

In this study, we focused on these aspects and applied them in a company standardisation project. We found that the economic goals of standardisation can be achieved without resistance from employees. Our analysis shows that social needs are not necessarily detrimental to economic goals. On the contrary, they can support these and have a beneficial influence. However, too much focus on human aspects can undermine the leading economic aspect of an organisation. By addressing all relevant aspects and associated norms, Dooyeweerd’s philosophy has helped us to determine the interrelated set of causes for resistance to standardisation, and to develop an approach to overcome this resistance. We found that Dooyeweerd’s theory of modal aspects was especially useful for analysing the problem, for systematically selecting relevant business theories for the project, and for giving a holistic analysis as a basis for recommendations. This was done by linking insights from the field of business administration to those aspects that were most prominent in the case. These aspects relate to the original situation, the intended new situation, and the transition from the existing to the desired situation. Our findings suggest that such an approach can be applied in other standardisation cases as well, but we expect that modifications will be required due to situational differences. Moreover, it is a holistic approach and not just a management tool, and rigid application would create rather than solve problems because it would mean forcing employees to accept a system. Therefore, the solution is not to prescribe but rather to familiarise managers with the approach. Then they will learn that business issues can be seen from different angles and that by doing so rigid solutions that may harm rather than benefit the organisation can be avoided. By becoming sensitive to the multitude of aspects and getting a feeling which are the most relevant ones, they may also look for – case-specific – managerial and quality management approaches and tools to support them in finding sustainable solutions. It illustrates that standardisation is a multidisciplinary field of research and that contributions from many disciplines are needed for a solid understanding, and that a business approach fed by philosophy may help to interrelate these contributions (De Vries, 2015).

Our approach differs from ‘best practice’ approaches for in-company standardisation (De Vries, 2006; Van Wessel, 2010) or for ISO 9001 implementation (Briscoe et al., 2005; Lin & Jang, 2008). First, this is a single case study and replication studies might show whether certain patterns apply that distinguish good from worse practices. However, assuming that indeed a best practice model can be developed, then this model as such might serve as a system which would be implemented in another organisation. This as such may cause resistance (Foucault) and affect the ‘life world’ (Habermas). Following Dooyeweerd, a best practice may be of help because it provides insights into what helps in similar situations, and the more aspects covered in this best practice the more informative the model, but each situation is unique as well and may deserve other emphasis, also depending on the people involved. So, our approach would help researchers as well as managers to not forget aspects that might be important, but we think it does not make sense to see the ‘model’ developed for our case company as a general model to be applied in other companies as well.

We encourage researchers to replicate our study. A longitudinal multiple case study would be best but requires a substantial amount of time and research capacity. Action-research in which our approach is applied to one or more cases would be a feasible alternative. It seems that our findings reach beyond the area of in-company standardisation and can be beneficial to organisational areas as well. Our approach may be used to combine insights from mono-disciplinary studies of organisations into a balanced multidisciplinary approach which is relevant for both research and practice.

## REFERENCES

- Adolphi, H. (1997). *Strategische Konzepte zur Organisation der betrieblichen Standardisierung*. DIN Normungskunde Band 38. Berlin: Beuth Verlag.
- AFNOR. (1967). *La normalisation dans l'entreprise*. Paris: AFNOR.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Allen, P.S. (Ed.). (1913). *Opus Epistolarum Des Erasmi Roterodami* (vol. II, pp. 1517-1519). Oxford / New York: Oxford University Press.
- Al-Mashari, M., Irani, Z. & Zairi, M. (2001). Business process reengineering: a survey of international experience. *Business Process Management Journal*, 7(5), 437-455.
- Arthur, W.B. (1989). Competing Technologies, Increasing Returns, and Lock-in by Historical Events. *The Economic Journal*, 394(99), 116-131.
- Basden, A. (2004). Dooyeweerd and Freedom. In *The Dooyeweerd Pages*. Retrieved January 7, 2010, from <http://www.dooy.salford.ac.uk/freedom.html>
- Basden, A. (2010). *The Dooyeweerd Pages*. Retrieved January 7, 2010, from <http://www.dooy.salford.ac.uk/index.html>
- Becker, M. C. (Ed.). (2008). *Handbook of organisational routines*. Cheltenham, UK / Northampton, MA, USA: Edward Elgar.
- Benner, M. J., & Veloso, F.M. (2008). ISO 9000 practices and financial performance: A technology coherence perspective. *Journal of Operations Management*, 26(5), 611-629.
- Bentham, J. (1838). Plan of the Panopticon. In John Bowring (Ed.), *The Works of Jeremy Bentham* (vol. IV, pp. 172-173). Edinburgh: William Tait.
- Berry, T.H. (1991). *Managing the Total Quality Transformation*, McGraw-Hill, New York, NY.
- Bevan, R. (2011). *Changemaking: Tactics and Resources for Managing Organizational Change*. Seattle, WA: ChangeStart Press.
- Boh, W.F., & Yellin, D. (2007). Using Enterprise Architecture Standards in Managing Information Technology. *Journal of Management Information Systems*, 23(3), 163-207.
- Boiral, O. (2003). ISO 9000: Outside the iron case. *Management Science*, 14(6) 720-737.

- Boiral, O., & Roy, M. (2007). ISO 9000: integration rationales and organisational impacts. *International Journal of Operations & Production Management*, 27(2), 226-247.
- Brehm, S., & Brehm, Jack W. (1981). *Psychological Reactance – a Theory of Freedom and Control*. New York / London / Toronto / Sydney / San Francisco: Academic Press.
- Briscoe, J., Fawcett, S., & Tood, R. (2005). The Implementation and Impact of ISO 9000 among Small Manufacturing Enterprises, *Journal of Small Business Management*, 43(3), 309–330.
- Brown, A., Van Der Wiele, T., & Loughton, K. (1998). ‘Smaller enterprises’ experiences with ISO 9000. *International Journal of Quality & Reliability Management*, 15(3), 273-285.
- Brown, M., Hitchcock, D. & Willard, M. (1994). *Why TQM Fails and What to Do About It*. Irvin, Burr Ridge, IL.
- Brunsson, N. (2000). The Pros and Cons of Standardisation – An Epilogue. In Nils Brunsson, Bengt Jacobsson, and associates, *A World of Standards* (pp. 169-173). Oxford, UK: Oxford University Press.
- Brunsson, N., & Jacobsson, B. (2000). Following Standards. In Nils Brunsson, Bengt Jacobsson, and associates, *A World of Standards* (pp. 125-137). Oxford, UK: Oxford University Press.
- Buckler, B. (1996). A learning process mode to achieve continuous improvement and innovation. *The learning organisation*, 3(3), 31-39.
- Carnall, C. & Todnem, R (2007) *Managing Change in Organizations* (6th ed.). Harlow, UK: Pearson Education.
- Casadesús, M., & Karapetrovic, S. (2005). Has ISO 9000 lost some of its lustre?. *International Journal of Operations & Production Management*, 25(6), 580-596.
- Connor, P.E. (1997). Total quality management: A selective commentary on its human dimensions, with special reference to its downside. *Public Administration Review*, 57(6), 501-509.
- Corbett, C.J., Montes-Sancho, M.J., & Kitsch, D.A. (2005). The Financial impact of ISO 9000 Certification in the United States: An Empirical Analysis. *Management Science*, 51(7), 1046-1059.
- Dahlgaard, J., Larsen, H.Z. & Norgaard, A. (1997). Leadership profiles in quality management: a Danish perspective. *Total Quality Management*, 8(2/3), 16-30.
- Dale, B.G. & Cooper, C. (1992). *Total Quality and Human Resources: An Executive Guide*. Blackwell, Oxford.
- Dale, B.G., Van der Wiele, A., & Van Iwaarden, J.D. (2007). TQM: An Overview. In Dale, B.G., Van der Wiele, T. and Van Iwaarden, J. (Eds.), *Managing Quality* (5). Malden, MA, Oxford, UK and Carlton, Victoria, Australia: Blackwell Publishing.

Dale, B.G. (2007). Quality Management Systems. In Dale, B.G., Van der Wiele, T. and Van Iwaarden, J. (Eds.), *Managing Quality* (pp. 279-309). Malden, MA, Oxford, UK and Carlton, Victoria, Australia: Blackwell Publishing.

Davenport, T.H. & Short, J.E. (1990), The new industrial engineering: information technology and business process re-design. *Sloan Management Review*, 31(4), 11-27.

David, P.A. (1995). Standardisation policies for network technologies: the flux between freedom and order revisited. Richard Hawkins, Robin Mansell, and Jim Slea (Eds.), *Standards, Innovation and Competitiveness – The Politics and Economics of Standards in Natural and Technical Environments* (pp. 15-35). Aldershot, UK and Brookfield, USA: Edward Elgar.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

Davis, F.D., Bagozzi, R.P. & Warsaw, P.R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8), 982-1003.

De Vries, H.J. (1997) Standardization – What's in a name? *Terminology – International Journal of Theoretical and Applied Issues in Specialized Communication*, 4(1), 55-83 (rectification in 4(2)).

De Vries, H.J. (2006) Best Practice in Company Standardization. *International Journal for IT Standards and Standardization Research*, 4(1), 62-85.

De Vries, H.J. (2015). Standardisation – A Developing Field of Research. In Panagiotis Delimatsis (Ed.) *The Law, Economics and Politics of International Standardisation*. Cambridge, UK: Cambridge University Press.

De Vries, H.J., & Van Delden, M. (2006). How to integrate standardisation in knowledge management. *ISO Focus*, 3(3), 37-40.

Dick, G.P.M., Heras, I., & Casadesús, M. (2008). Shedding light on causation between ISO 9001 and improved business performance. *International Journal of Operations & Production Management*, 28(9), 687-708.

Dooyeweerd, H. (1955). A new critique of theoretical thought. *The general theory of the modal spheres* (vol. 2). Amsterdam: H.J. Paris, and Philadelphia: The Presbyterian and Reformed Publishing Company.

Dooyeweerd, H. (1957). A new critique of theoretical thought. *The structures of individuality of temporal reality* (vol. 3). Amsterdam; H.J. Paris, and Philadelphia: The Presbyterian and Reformed Publishing Company.

Elkington, J. (1997). *Canibals with Forks: The triple bottom line of the 21<sup>st</sup> century business*, Capstone, Oxford.

Ellul, J. (1970). *The meaning of the city*. Grand Rapids, MI: Eerdmans.

Foucault, M. (1976). *Histoire de la sexualité I – La volonté de savoir*. Paris: Éditions Gallimard.

Foucault, M. (1977). *Discipline and Punish; Birth of the Prison* (Sheridan, A., Trans.). London: Penguin. (Original work published 1975).

- Foucault, M. (1982). Afterword. The subject and power. In Dreyfus, H.L. & Rabinov, P. *Michel Foucault. Beyond structuralism and hermeneutics* (pp. 208-226). Brighton, Chicago, IL: University of Chicago Press.
- Furusten, S. (2000). The Knowledge Base of Standards. In Brunsson, N., Jacobsen, B., and associates, *A World of Standards* (pp. 71-84). Oxford, UK: Oxford University Press.
- Goudzwaard, B. (1979). *Capitalism and Progress: A Diagnosis of Western Society*. Toronto: Wedge.
- Gouldner, A.W. (1954). *Patterns of industrial Bureaucracy – A case study of modern factory administration*. New York: The Free Press.
- Grimes, K.R. (2003). *ISO 9001:2000: a practical quality manual explained*. Milwaukee: ASQ Quality Press.
- Habermas, J. (1987). *The Theory of Communicative Action: Lifeworld and System: A Critique of Functionalist Reason* (vol. 2, Thomas McCarthy, Trans.). Boston: Beacon. (Original work published 1981).
- Hammer, M. (1990). Re-engineering work: don't automate, obliterate. *Harvard Business Review*, 68(4), 104-112.
- Hammer, M. Champy, J. (1993). *Re-engineering the corporation: a manifesto for business revolution*. Harper Business, New York, NY.
- Harrington, H.J. (1987). *The Improvement Process*. New York: McGraw-Hill.
- Haverkamp, A. (2004). *Bezint eer gij begint – Standaardisatie van werkmethode bij Polynorm Automotive – Onderzoek op basis van een christelijk-filosofische analyse*. Rotterdam: Erasmus Universiteit, Faculteit Bedrijfskunde.
- Haverkamp, A. (2006). Een veelzijdig kwaliteitsverbeteringsproject. *Synaps*, 4(20), 21-26.
- Hesser, W. (2010). Standardisation within a Company – a Strategic Perspective. In: Hesser, W. (Ed.) *Standardisation in Companies and Markets*, Ed. 3. Hamburg: pp. 215-258.
- Hofstede, G. (1978). The Poverty of Management Control Philosophy. *Academy of Management Review*, 3(3), 450-461.
- IATF. (2016). *IATF 16949:2016 Quality management system for organizations in the automotive industry*
- Imai, M. (1986). *Kaizen – the key to Japan's competitive success*. New York: Random House.
- ISO. (2008). *ISO 9001:2008 Quality management systems – Requirements*. Geneva: International Organisation for Standardisation.
- ISO. (2015). *ISO 9001:2015 Quality management systems – Requirements*. Geneva: International Organisation for Standardisation.
- ISO. (2009). *ISO/TS 16949:2009 Quality management systems – Particular requirements for the application of ISO 9001:2008 for automotive production and relevant service part organisations*. Geneva: International Organisation for Standardisation.

- ISO. (2018). *The ISO Survey of Management System Standard Certifications 2017*. Retrieved November 1, 2018, from [https://isotc.iso.org/livelink/livelink/fetch/-8853493/8853511/8853520/18808772/00.\\_Overall\\_results\\_and\\_explanatory\\_note\\_on\\_2017\\_Survey\\_results.pdf?nodeid=19208898&vernum=-2](https://isotc.iso.org/livelink/livelink/fetch/-8853493/8853511/8853520/18808772/00._Overall_results_and_explanatory_note_on_2017_Survey_results.pdf?nodeid=19208898&vernum=-2)
- Kalpakjian, S. (1995). *Manufacturing Engineering and Technology* (3rd ed.). Reading, MA: Addison-Wesley.
- Kalsbeek, L. (1975). *Contours of a Christian Philosophy: An Introduction to Herman Dooyeweerd's Thought*. Toronto: Wedge.
- Kanji, G.K. (1990). Total quality management: the second industrial revolution. *Total Quality Management*, 1, 3-12.
- Kelly, M. (1994). Foucault, Habermas and the Self-Referentiality of Critique. In Kelly, M. (Ed.), *Critique and Power – Recasting the Foucault/Habermas Debate*. Cambridge, MA and London, UK: The MIT Press.
- Kondo, Y. (1996). Are creative ability and work standardisation in contradictory relationship?. *Training for quality*, 4(3), 35-39.
- Kondo, Y. (2000). Innovation versus standardisation. *The TQM Magazine*, 12(1), 6-10.
- Lagrosen, Y. & Lagrosen, S. (2005). The effects of quality management – A survey of Swedish quality professionals. *International Journal of Operations & Production Management*, 25(10), 940-952.
- Lazaric, N. & Denis, B. (1995). Routinization and memorization of tasks in a workshop: the case of the introduction of ISO norms. *Industrial and Corporate Change*, 15(5), 873-896.
- Lelong, B. & Mallard, A. (1995). Presentation. *Reseaux*, 18(102), 9-34.
- Lin, Ch.-I. & Jang, W.-Y. (2008). Successful ISO 9000 implementation in Taiwan: How can we achieve it, and what does it mean? *International Journal of Productivity and Performance Management*, 57(8), 600 – 622
- Lo, L.K. & Chang, D.S. (2007). The difference in the perceived benefits between firms that maintain ISO certification and those that do not. *International Journal of Production Research*, 48(5), 1881-1897.
- Macdonald, J. & Dale B.G. (2007). Business Process Re-engineering. In Dale, B.G., Van der Wiele, T. and Van Iwaarden, J. (Eds.), *Managing Quality* (5). Malden, MA, Oxford, UK and Carlton, Victoria, Australia: Blackwell Publishing.
- Magd, H.A.E. (2008). ISO 9001:2000 in the Egyptian manufacturing sector: perceptions and perspectives. *International Journal of Quality & Reliability Management*, 25(2), 173-200.
- Mahadevappa, B., & Kotreshwar, G. (2004). Quality Management Practices in Indian ISO 9000 Certified Companies: an Empirical Evaluation. *Total Quality Management*, 15(3), 295-305.
- Manders, B. (2015). *Implementation and Impact of ISO 9001*. ERIM PhD Series Research in Management. Rotterdam: Erasmus Research Institute of Management – ERIM.



- Mom, T.J.M., Van den Bosch, F.A.J., & Volberda, H.W. (2002), 'Exploratie én exploitatie van kennis - Het managen van de determinanten van horizontale kennisuitwisseling', *Management en Organisatie*, 56(5), 23-43.
- Martínez-Costa, M., Choi, T.Y., Martinez, J.A., & Martínez-Lorente, A.R. (2009). ISO 9000/1994, ISO 9001/2000 and TQM: The performance debate revisited. *Journal of Operations Management*, 27(6), 495-511.
- Nair, A., & Prajogo, D. (2009). Internalisation of ISO 9000 standards: the antecedent role of functionalist and institutional drivers and performance implications. *International Journal of Production Research*, 47(16), 4545-4568.
- Nakamura, S. (2000). *The new standardisation: Keystone of continuous improvement in manufacturing*. Portland, OR: Productivity Press.
- Naveh, E. & Erez, M. (2004). Innovation and Attention to Detail in the Quality Improvement Paradigm. *Management Science*, 50(11), 1576-1586.
- Naveh, E., Marcus, A., & Moon, H.K. (2004). Implementing ISO 9000: performance improvement by first or second movers. *International Journal of Production Research*, 42(9), 1843-1863.
- Nicolau, J.L., & Sellers, R. (2002). The stock market's reaction to quality certification: Empirical evidence from Spain. *European Journal of Operational Research*, 142(3), 632-641.
- Nicoloso, E. (2007). Bridging the gap between quality management systems and product quality. *ISO Management Systems*, 7(1), 7-11.
- Nonaka, I. (1994). A Dynamic Theory of Organisational Knowledge Creation. *Organisation Sciences*, 5(1), 14-37.
- Nonaka, I., and Takeuchi, H. (1995). *The knowledge creating company: how Japanese companies create the dynamics of innovation*. New York, Oxford University Press.
- Manders, B. (2015). *Implementation and Impact of ISO 9001*. ERIM PhD Series in Research in Management 337. Rotterdam: Erasmus Research Institute of Management – ERIM.
- Olian, J.P. & Ryness, S.L. (1991). Making total quality work: aligning organizations, performance measures, and stakeholders. *Human Resource Management*, 30, 303-333.
- Padma, P., Ganesh, L.S., & Rajendran, C. (2008). A study on the critical factors of ISO 9001:2000 and organisational performance of Indian manufacturing firms. *International Journal of Production Research*, 46(18), 4981-5011.
- Paper, D., Rodger J., & Pendharkar, P.C. (2001). A BPR case study at Honeywell. *Business Process Management Journal*, 7(2), 85-99
- Reed, R., Lemak, D.J., & Mero, N.P. (2000). Total quality management and sustainable competitive advantage. *Journal of Quality Management*, 5, 5-26
- Rogers, E.M. (2003). *Diffusion of innovations*. Ed. 5. New York: Simon & Schuster.
- Simons, C.A.J., & De Vries, H.J. (2002). *Standaard of maatwerk – Bedrijfskeuzes tussen uniformiteit en verscheidenheid*. Schoonhoven, The Netherlands: Academic Service.

- Slob, F.J.C., & De Vries, H.J. (2001). Wie die (petro)chemische Industrie von Normen profiteert. *DIN-Mitteilungen*, 80(6), 440-442.
- Spencer, B.A. (1994). Models of organization and total quality management: A comparison and critical evaluation, *Academy of Management Review*, 19(3), 446-471
- Sprenger, C.C., & Ten Have, S. (1996). Kennismanagement als motor van de lerende organisatie. *Holland Management Review*, 51, 69-76.
- Strauss, D.F.M. (2009). *Philosophy: Disciplines of the Disciplines*. Paideia Press.
- Talib, F., Zillur, R., & Qureshi (2010). A study of total quality management and supply chain management practices. *International Journal of Productivity and Performance Management*, 60(3), 268-288.
- Tamm-Halström, K. (2004). *Organizing International Standardisation – ISO and the IASC in Quest of Authority*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
- Terziovski, M., Power, D., & Sohal, A.S. (2003). The longitudinal effects of the ISO 9000 certification process on business performance. *European Journal of Operational Research*, 146(3), 580-595.
- Terziovski, M., Samson, D., & Dow, D. (1997). The business value of quality management systems certification – Evidence from Australia and New Zealand. *Journal of Operations Management*, 15(1), 1-18.
- Tzelepis, D., Tsekjournas, K., Skuras, D. & Dimara, E. (2006). The effects of ISO 9001 on firms' productive efficiency. *International Journal of Operations & Production Management*, 26(10), 1146-1165.
- Mom, T.J.M., Van Den Bosch, F.A.J., & Volberda, H.W. (2002). Exploratie én exploitatie van kennis. *Management en Organisatie*, 56(5), 23-43.
- Van Kemenade, E.A., Hardjono, T.W., & De Vries, H.J. (2011). The willingness of professionals to contribute to their organisation's certification. *International Journal of Quality and Reliability Management*, 28(1), 27-42.
- Van Veldhuisen, A. (1996). *De Macht van het Systeem – Een studie naar kwaliteitssystemen gebaseerd op het werk van Michael Foucault*. Rotterdam: Erasmus Universiteit, Faculteit Bedrijfskunde.
- Van Wessel, R. (2010). *Toward Corporate IT Standardization Management: Frameworks and Solutions*. Hershey, PA: IGI Global.
- Weber, M. (1922). *Wirtschaft und Gesellschaft*. Tübingen; J.C.B. Mohr.
- Wenström, H., Ollner, J. & Wenström, J. (2010). *Focus on Industry and Standards – An Integrated Approach*. Stockholm: SIS.
- Wissema, J.G., Messer, H.M., & Wijers, G.J. (1991). *Angst voor veranderen? Een mythe! – Of: Hoe u veranderingsbereidheid op de werkvloer vergroot*. Assen and Maastricht: Van Gorcum.

Yeung, A.C.L., Lee, T.S., & Chan, L.Y. (2003). Senior management perspectives and ISO 9000 effectiveness: an empirical research. *International Journal of Production Research*, 41(3), 545-569.

Zink, K.J. (1997). *Total Quality Management as a Holistic Management Concept*, Springer, Berlin.

Zink, K.J. (2007). From total quality management to corporate sustainability based on a stakeholder management. *Journal of Management History*, 13(4), 394-401.

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## ENDNOTES

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<sup>1</sup> Updated and extended version of Ries Haverkamp and Henk J. de Vries (2016), 'Managing In-Company Standardisation while Avoiding Resistance: A Philosophical-Empirical Approach' in *Effective Standardization Management in Corporate Settings*. Kai Jacobs (eds), 184-213, IGI Global, which was an extension and adaptation (from the domain of quality management research to the domain of standardisation research) of an earlier paper (De Vries, Henk J. & Haverkamp, Andries (2015). Overcoming resistance against quality control – A philosophical-empirical approach, *International Journal of Quality & Reliability Management*, 32(1), 18-41).