On Closedowns: Towards a Pattern of Explanations to the Closedown effect
On Closedowns:
Towards a Pattern of Explanations
to the Closedown effect
Abstract

Productivity effects under uncertainty and threat is the topic of this thesis. It comprises a synthesis and four papers on closedown – focusing a phenomenon where there is an overall productivity increase during the closedown process. Productivity effects are the primary focus of this work’s case closedown studies, and uncertainty and threat the common denominator of the cases. This thesis contributes a theoretical foundation for analysis of closedowns. It identifies explanatory contributing factors and patterns which enable a better understanding of the Closedown effect.

The theoretical foundation for this thesis is outlined in the first paper. It recontextualizes the Hawthorne experiments by applying a closedown perspective to them. This new perspective identifies several similarities between the Hawthorne experiments and situations where closedown is threatened or decided. Originally the Hawthorne experiments were viewed as a closed system, laboratory experiments instead of actions on daily operations. The new perspective analyzed the prevalent threat implicit in the context that the Hawthorne experiments were conducted in. Such threat was identified in other earlier work on the Horndal and Closedown effect, situations where productivity also increased. Threat can act as a motivator or de-motivator. With the recontextualized perspective, it was found that employees become sensitive to their managerial and informational context, and so productivity patterns fluctuate. A productivity increase is observed overall when closedown is threatened. It is this phenomenon we term the Closedown effect.

In the second paper, a case study of the closure of a plant tracks productivity fluctuations and fine-tunes analysis of critical events that occur during a closedown process. It builds on the previous papers theoretical foundations and outlines a theoretical model for explaining the Closedown effect. Productivity development depends on workers’ interpretations of management information, and actions and reactions to the prevalent closedown. The dialectics between management and workers change during the closedown period – there were fewer conflicts, speedier conflict resolution, increased formal and informal worker autonomy, and more workers’ work design initiatives. A HRM-program initially had a positive effect on workers, but its importance diminished during the closedown period. The closedown decision generated structural changes: management control over daily operations diminished, informal leadership evolved and individualization grew stronger as the importance of informal groups deteriorated.

In the third paper a multiple case-study is presented. Lack of social responsibility characterizes the managerial setting in these cases, in contrast to the case study presented in the second paper. That is, here there was a lack of management support for worker activities in this particular closedown process. The Closedown effect was found to be statistically significant in three of the four cases. This paper also contributes a theoretical elaboration of the Closedown effect, including distinguishing the key aspects needed in a detailed analysis of the closedown process.

In the fourth paper the productivity paradox is examined with a holistic approach, which draws on Buckley’s (1967) modern systems theory. This holistic perspective considers changes in the initial economic and institutional structure, and assesses the dynamics that are triggered by the closedown decision. A closedown decision evidently reorders the equilibrium between management and the workers. The main holistic pattern that emerges is a new order, where worker self management replaces management control at plant level and workplace psychology is based on the apprehension of unfairness.

An empirically-close analysis approach is a recognized method for highlighting puzzling phenomenon and developing explanatory patterns. This empirically-close analysis of the empirical data generated in this thesis enabled identification of key factors to explain the appearance of the Closedown effect. Moreover, it was a means for generating a more rigorous theoretical understanding of the Closedown effect, and developing a pattern of explanations to this productivity increase effect.

A key theoretical contribution of this thesis is the identification of a range of concepts that form antecedent explanations to the Closedown effect’s occurrence. These antecedents are aggregated in themes: managerial actions, counter-institutional actions, conflict context, worker autonomy, perceived threat of job loss, collective action, economic and institutional reordering, and institutional restrictions. The following describes the influence of these aggregates and their temporal dynamics, in relationship to the Closedown effect.

The identification above factors and the generation of a theoretical framework to assess closedowns is the contribution this thesis makes. The significance of these for future research is also critically assessed.

Key words: Closedown, Closedown effect, Downsizing, Productivity
This Gun’s for hire
Bruce Springsteen
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Örebro, 28 January, 2008

/Magnus Hansson
# Table of Content

ABSTRACT ................................................................................................................................. 5
ACKNOWLEDGEMENTS ............................................................................................................. 7
TABLE OF CONTENT ................................................................................................................ 9
LIST OF TABLES ....................................................................................................................... 11
LIST OF FIGURES .................................................................................................................... 11
PAPERS IN THIS THESIS ......................................................................................................... 12
VIGNETTE .................................................................................................................................. 13

1 INTRODUCTION .................................................................................................................... 17
   Research questions and purposes ......................................................................................... 25
   Interrelationship between the research questions ............................................................... 28
   Contributions from this thesis ............................................................................................. 30

2 A NOTE ON THE THEORETICAL BACKGROUND .................................................................. 31
   2.1 A NOTE ON THE COMPARABILITY BETWEEN DOWNSIZING AND CLOSEDOWN LITERATURES ........ 32
   2.2 A NOTE ON PRODUCTIVITY AND LABOR PRODUCTIVITY MEASURES ...................................... 41
       2.2.1 A note on productivity measures in closedown contexts .................................................. 45

3 RESEARCH DESIGN AND METHODOLOGICAL CONSIDERATIONS ......................................... 47
   3.1 MY EXPLORATIVE RESEARCH JOURNEY ........................................................................... 47
       3.1.1 Sequence of the papers and an overview of their content .............................................. 54
       3.1.2 A critical reflection of the explorative approach ........................................................... 57
   3.2 SEARCHING FOR LITERATURE AND INFORMATION ........................................................... 61
   3.3 A NOTE ON THE COMPARABILITY AMONG THE PAPERS .................................................. 64
   3.4 THE TRUSTWORTHINESS OF THE RESEARCH ........................................................................ 70
       3.4.1 Credibility ....................................................................................................................... 70
       3.4.2 Transferability ................................................................................................................ 73
       3.4.3 Dependability ................................................................................................................ 74
       3.4.4 Confirmability ................................................................................................................ 74
   3.5 MY CONTRIBUTION AND WORK EFFORT IN THIS THESIS ................................................ 75
       3.5.1 Recontextualizing the Hawthorne effect ...................................................................... 76
       3.5.2 When the Lights Go Out .............................................................................................. 76
       3.5.3 Pyrrhic Victories – Anticipating the Closedown effect .................................................. 76
       3.5.4 A Holistic Approach to the Productivity Paradox ......................................................... 76
       3.5.5 Thesis .......................................................................................................................... 77

4 RESULTS .................................................................................................................................. 79
   4.1 A NOTE ON THE DEVELOPMENT OF A PATTERN OF EXPLANATIONS TO THE CLOSEDOWN EFFECT ...... 79
       4.1.1 A critical reflection on the development of a pattern of explanations to the Closedown effect.... 83
   4.2 MAJOR VARIABLES IDENTIFIED ....................................................................................... 89
   4.3 DATA STRUCTURE ............................................................................................................. 97
   4.4 TOWARDS A PATTERN OF EXPLANATIONS TO THE CLOSEDOWN EFFECT .................................. 99
       4.4.1 Closedown effect ......................................................................................................... 100
       4.4.2 Antecedents to the Closedown effect ........................................................................... 102
           4.4.2.1 Managerial actions ................................................................................................. 102
           4.4.2.2 Counter-institutional action .................................................................................... 105
           4.4.2.3 Conflict context ...................................................................................................... 107
           4.4.2.4 Worker autonomy ................................................................................................. 109
           4.4.2.5 Perceived threat of job loss .................................................................................... 111
           4.4.2.6 Collective action ..................................................................................................... 115
           4.4.2.7 Institutional reordering ......................................................................................... 118
       4.4.3 A critical reflection on the limitations of the pattern of explanations to the Closedown effect ... 123
PRACTICAL IMPLICATIONS OF THIS WORK ................................................................. 125

FUTURE RESEARCH POSSIBILITIES ............................................................................. 127

6.1 METHODOLOGICAL CONSIDERATIONS ............................................................... 127
  6.1.1 Multiple case studies vs. surveys ................................................................. 129

6.2 THEORETICAL CONSIDERATIONS ...................................................................... 131
  6.2.1 Downsizing literature .................................................................................. 131
  6.2.2 Motivational theory ..................................................................................... 132
  6.2.3 Small-group theory ..................................................................................... 135
  6.2.4 Management accounting ............................................................................. 135

REFERENCES .............................................................................................................. 137

DISSERTATIONS FROM THE SWEDISH RESEARCH SCHOOL OF MANAGEMENT AND
INFORMATION TECHNOLOGY (MIT) ................................................................................ 152

ENDNOTES .................................................................................................................. 157
List of Tables

Table 1 Papers in this thesis ..................................................................................................... 12
Table 2 Detailed research questions and purposes of this thesis ........................................ 26
Table 3 Contributions from this thesis ................................................................................ 30
Table 4 The dirty dozen ........................................................................................................ 38
Table 5 Sequence of the papers and overview of their content ......................................... 56
Table 6 Key-words used for the literature search ................................................................. 62
Table 7 Referred empirical cases in the thesis ................................................................. 69
Table 8 Dominant variables identified from the papers as explanations to the Closedown effect .................................................................................................................. 96
Table 9 Data structure - Progression of the categorical analysis ........................................ 98

List of Figures

Figure 1 Performance drivers in a closedown process – towards a pattern of explanations to the Closedown effect .......................................................................................................................... 99
Figure 2 Schematic outcome of the productivity development, economically reordering the organization into the closedown equilibrium .................................................................................. 119
Figure 3 A dynamic model of economic and institutional change on the organizational level of analysis ............................................................................................................................................ 121
## Papers in this thesis

<table>
<thead>
<tr>
<th>Paper #</th>
<th>Title of the paper</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper II</td>
<td>When the Lights Go Out</td>
<td>Under review:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In <em>International Journal of Human Resource Management</em></td>
</tr>
<tr>
<td>Paper III</td>
<td>Pyrrhic Victories – Anticipating the Closedown effect</td>
<td>Published: Hansson, M. and Wigblad, R. (2006b)</td>
</tr>
</tbody>
</table>

Table 1 Papers in this thesis
Vignette

Early in the morning, factory whistle blows,
Man rises from bed and put on his cloths,
Man takes his lunch, walks out in the morning light
...
End of day, factory whistle cries.
Men walk though these gates with death in their eyes.
And you just better believe boy, somebody’s gonna get hurt tonight,
It’s the working, the working, just the working life.

Bruce Springsteen, “Factory” from Darkness on the Edge of Town, 1978

Recently the media had drawn attention to layoffs and plant closures by Ford and General Motors (GM) in the US. At the beginning of 2006, Ford announced it will close 14 factories and eliminate up to 30,000 jobs by 2012 (The Economist, 2006c; New York Times, 2006). The majority of layoffs will be at factory-floor level, but some 4,000 white-collar jobs will go too (The Economist, 2006c). GM announced 35,000 layoffs, closing several assembly and parts plants throughout US (Credit Union Journal, 2006; The Economist, 2006a).

Both Ford and GM are long acquainted with the process of corporate restructuring, particularly through plant closures (New York Times, 2005). On top of the job cuts in its “Way Forward” announced in January 2006 Ford is now planning further job cuts. The “Way Forward” was a response to the failure of Ford’s 2002 recovery plan, where severance packages were offered to those laid off (The Economist, 2006c; Ward’s Auto World, 2006). Including cuts that took place at the Chrysler Corporation, the Big Three automakers have eliminated or announced plans to eliminate nearly 140,000 jobs since 2000. These also include white-collar workers. These are about one-third of their North American payroll (New York Times, 2006). Around the same time, the practice of plant closures was also announced in Europe: Volkswagen announced possible job cuts of approximately 20,000 positions over the next three years (The Economist, 2006b).

Closedowns are also a part of everyday life in Sweden. In common with trends in the USA, the majority of the layoffs in Sweden are factory-floor jobs. Recent examples of closedowns in Sweden are: Scania ABs announcement to close two plants, in Falun and Sibbhult, where approximately 1,100 workers will loose their jobs; Electrolux’s Torsvik plant, with 200 job losses; and, Arla Foods production in Örebro, with 100 job losses.
Closedowns are an integral part of the process of industrial restructuring (e.g., Gratzer & Box, 1999; Hannan & Freeman, 1975). This restructuring shapes industries, aggregate productivity paths, and is a major component of job destruction. While plant closures are part of the normal process of the entry and exit of firms, there is substantial heterogeneity in the closedown probability across plants, firms and industries (Mellahi & Wilkinson, 2004). Some closedowns are associated with firm failure, others are choices by firms to reallocate activity amongst its production units, and some plants are driven out of existence by increasing foreign competition (e.g., Bernhard & Jensen, 2003, 2002; Mellahi & Wilkinson, 2004; Zammuto & Cameron, 1985).

Organizations in decline frequently reduce their workforces and often feel this is necessary (Greenhalgh, Lawrence & Sutton, 1988). During the 1990s, Sweden and other countries faced massive workforce reductions, affecting private companies and public sector organizations (Bergström & Diedrich, 2006). While the magnitude of workforce reduction seems to have decreased at beginning of the new millennium, the contours of restructuring are still evident.

At its most extreme, downsizing occurs through closure of a production or service unit, such as a hospital, mining operation, administrative section, transport facility or factory (Weber & Taylor, 1963; Bladwin, 2005). Irrespective of the type of the unit being closed, the common feature of all closure events is the creation of a temporary organization out of its previous permanent organization. This fundamentally reorders the organization’s pre-existing social relations. Such temporary organizations arising from closures are commonplace: For example, in Australia, at least 30,000 businesses close annually and, as a consequence, 100,000 plus workers are retrenched (ABS, 2001; ABS, 2002). USA data for the year 2002 reported 302,979 workers were displaced as a result of 1,178 permanent worksite closures (BLS, 2003) In Sweden 12,191 full time employees (representing 19.8 per cent of all layoffs) were displaced in 611 closures (AMV, 2004).

Such restructuring events are often explained motivated as a consequence of increased competition and other changes in the external environment. Often demands of improved revenues and costs are cited. Focus and scrutiny then falls on operational expenditures, including labor costs etc., (OPEX), capital expenditures (CAPEX). Such focus often leads to transfer of production to low-wage countries. Such cost cutting strategies appear to be
ineffective as some companies continue to follow the same rationale years later (Appelbaum, et al., 1999; Caulkin, 1995; Marks & De Meuse, 2003). Cost cutting strategies can be the start of downsizing events, reducing the work force and investments.

To increase efficiency, many firms had increased automatization and initiated productivity enhancing activities. In some cases, this has generated over capacity within firms, who then go on to eliminate productive capacity to reduce costs. This can lead to closedowns of facilities, departments or plants. Here closedown victims loose their faith in productivity initiatives.

Restructuring is part of everyday business life. At its extreme, restructuring events mean closedowns. The reasons given for closure are many. Evidence from research on closedowns indicates that a closedown decision generates certain dynamics. When compared to the outcomes of downsizing activities, paradoxically, closure appears to result in high productivity, quality output, worker cooperation and commitment. Yet scholarly understanding of these outcomes is limited and diverse.
1 Introduction

This thesis includes four papers on closedowns. Productivity during closedown processes is their common denominator and primary focus. On the single-firm level, productivity is analyzed from the initial announcement of a closedown risk to actual closure. Previous research has identified a Closedown effect – a productivity increase that occurs during the process of closedown (e.g., Bergman & Wigblad, 1999). To extract and generate explanations to the puzzling phenomenon of the Closedown effect, this particular thesis document analyses the four papers on closedowns, along with a literature assessment.

This thesis contributes to the emerging literature on closedowns by providing an analysis of multiple closedown cases, outlining patterns that explain the Closedown effect, and elaborating on theoretical models that identify performance drivers and dynamics during closedown processes. Analytical distinctions are different phases of a closedown process, and classification of closedown cases according to their managerial setting and time-frames.

Since there is little organizational science work on closedowns, this thesis takes an explorative approach. Four perspectives explored are: Firstly, how the threat of closedown can positively influence workers motivation and productivity. Secondly, how productivity develops throughout the closedown process in situations where management take a socially responsible approach in their handling of the closedown. Thirdly, how productivity develops during a closedown process where management handling lacks social responsibility. Comparison of the second and third perspectives enables the effects of managerial settings on closedown productivity to be explored. Fourthly, the actual closedown decision triggers changes in the institutional and economic structure. This takes a holistic systems theory approach (cf. Buckley, 1967) to enhance understanding of the puzzling phenomenon of the Closedown effect (Bergman & Wigblad, 1999).

It was recognized that there is little work within the organizational sciences on the topic of decline and closedown (e.g., Littler & Hansson, 2007; Whetten, 1980). Instead, growth is the foremost topic in the literature (e.g., Cameron, Sutton & Whetten, 1988: 17ff; Jackson, Mellahi & Sparks, 2005; Mellahi, Jackson & Sparks, 2002; Mellahi & Wilkinson, 2004). Reports of layoffs or closings rarely highlight productive, regenerating, or even balancing
outcomes. Instead, reductions in force, closings and divestitures are depicted as painful, wrenching, and bloody (cf. Marks & De Meuse, 2003). After Whetten’s (1980) oft-cited paper, more attention has been given to research on decline and in particular downsizing. Nonetheless, research on closedowns is limited.

Organizations are established, developed, matured, some even become prosperous. Others face decline (e.g., Greiner, 1972), downsizing, delayering, downscoping, layoffs (e.g., Brockner, et al., 1988a, b, 1987, 1986,1985), poverty, financial losses (e.g., Cameron, Sutton & Whetten, 1988: 20ff; Whetten, 1987, 1980; Cascio, 1991, 1993), and some even “die” (e.g., Bernhard & Jensen, 2003, 2002; Harris & Sutton, 1986; Sutton, 1987, 1983), or are being struck by changes within industries or (micro) niches (e.g., Hannan & Freeman, 1989, 1988, 1984, 1978, 1977, 1975).

The death of an organization is often a consequence of a chain of events and activities and seldom a surprising fact for its members. During such process certain dynamics comes into play and the process of what Sutton (1987) labels “organizational death” can create a value in just surviving. Workers often respond to threats with responses they have learned well from previous threats. Often such responses are inappropriate under the new conditions and maladaptive cycles can follow (cf. Weick, 1979; Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981).

Globalizations, increasing competition, corporate raiding, government deregulation, and changes in customer preferences have increased pressure on managers to improve the performance of their organizations. Through reductions in human and/or capital resources, managers attempt to improve both their organization’s alignment with its competitive environment and the internal alignment of its resources (DeWitt, 1993; Drazin & Van de Ven, 1985). Some organizations are closed down due to a conscious strategic decision-making of the managers to end the business into non-continuity while others “die” because of bankruptcy (e.g., Altman, 1984, 1971, 1970; Aziz, et al., 1988; Dembolina, 1983; Dimitras, Zanakis & Zopounidis, 1996; Chopra, 2006; Gratzer, 1999; Gratzer & Box 2002; Johnson, 1970; Mcgurr & Devaney, 1988; Wilcox, 1971).

Managers frequently cite poor industry conditions or weak demand as a reason for downsizing or closedowns (e.g., Espahbodi, John & Vasudevan, 2000). The tactic of downsizing, more
specifically work-force reduction, has been widely applied (e.g., Littler, et al., 2004, 1999; Sparrow, 1998, 1996; Sparrow & Hiltrop, 1994). Some organizations act in a short-term perspective, downsizing or delayering the organization. Other act with a long-term perspective, systematically seeking to reconfigure productive capacity and organizational culture to they become more competitive (e.g., Dawkins, et al., 1999). Laabs (1999) claims that one of the contributing reasons in strategic downsizing is the high cost of labor and the intention of freeing recourses that can be used somewhere else for a better return on investments.

Some research has indicated that downsizing, as a cost cutting strategy, is ineffective with since some companies appear to be forced to use this method of cost cutting for years (Appelbaum, et al., 1999; Caulkin, 1995; Marks & De Meuse, 2003). Cost cutting can include reductions in workforce and investments e.g. production equipment. Organizations often consider both of these to be their major costs components.

Manufacturing organizations that cut investments in production equipment risk falling behind their competitors since their productivity may relatively decrease. In its extreme, this can lead a closedown (Appelbaum, et al., 1999; Lee & Alexander, 1999). It is often argued that organizations need to right-size by eliminating unnecessary work, shedding underperforming or non-essential units, and responding to economic, legal, technological, and regulatory and customer preference changes. If organizations did not change, they would not remain competitive (cf. Marks & De Meuse, 2003: 20ff; Zammuto & Cameron, 1985).

Downsizing is often associated with negative performance outcomes, low worker commitment (Cameron et al., 1993; Littler, 2004, 2003a, b, 1999, 1994), decreased employee efforts and adaptability, increased propensity to leave (Dawkins, et al., 1999; Littler, et al., 2004, 2003a, b, 1994a, b), increased resistance to change (Brockner, et al., 1992, 1987; De Meuse, et al., 1997, 1994; Greenhalgh & Rosenblatt, 1984; Mische, 2001, Morris, Cascio & Young, 1999), decreased morale, loss of trust, increasing conflicts, lack of teamwork and lack of leadership (Cameron, 1994).

One stream of the downsizing research has focused on the ‘survivor syndrome’ as a cluster of negative workforce outcomes (e.g., Brockner, et al., 1988a, b, 1987, 1986, 1985; Noer, 1993). These psychological outcomes generate new psychological contracts, reduced career
consciousness and reduced organizational commitment (e.g., Brockner, et al., 1987; Freeman, 1993; Freeman & Cameron, 1993; Littler, et al., 2003a, b; Littler, 1999; Rousseau & McLean-Parks, 1993).

Sutton (1987) noted that much has been written about why organizations die (i.e. are closed down). A range of literature offers an array of explanations for the causes of failure and closedown (e.g., Cameron & Whetten, 1983; Carroll & Delacroix, 1982; Cunningham, 1997; Goodman et al., 1977; Hannan & Freeman, 1989, 1988, 1984).

The organizational metamorphosis literature reveals its research focus is the organizational consequences of decline, downsizing, retrenchment and turnarounds (Cunningham, 1997). There is little research or conceptual work on how the closedown process unfolds (e.g., Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Harris & Sutton, 1986; Lewer, 2001; Sutton, 1987, 1983; Weber & Taylor, 1963; Wigblad, 1998, 1995).

The few previous studies on closedown processes indicate that a temporary organization is formed as a consequence of a closedown decision. Managers are evidently less focused on day-to-day production activities, instead addressing management of the closedown process as such. Therefore, during the countdown period, workers find they have operative space within which they have the opportunity to develop innovative skills. In these cases, it has also been observed that during the closedown process, worker productivity tends to increase. This is in sharp contrast to downsizing’s productivity outcomes (e.g., Bergman, 1995; Bergman & Wigblad, 1999; Cameron, 1994; Littler et al., 2004, 2003a, b; Wigblad, 1998, 1995).

The productivity increase observed during closedowns has been termed the Closedown effect (Bergman & Wigblad, 1999; Wigblad, 1998, 1995). The Closedown effect occurs after the closedown decision, and when negotiations have established the countdown period.

It has been argued that the Closedown effect is primarily driven by people (e.g., Bergman & Wigblad, 1999). That is, the studied organizations have not made any capital investments in equipment (Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Lewer, 2001; Sutton, 1987). In some cases, productivity not only increases but is at an all-time high during the closedown period. Compared to the downsizing literature, where there is decreased productivity, there appears to be a paradox in these two closely related restructuring activities:
intuitive apprehension expects negative performance when there is job insecurity and uncertainty, which are aspects of both downsizing and closedown processes.

Whether there is a paradox or not, there are empirical foundations for this thesis’ exploration of the closedown (e.g., Bergman, 1995; Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Sutton, 1987; Weber & Taylor, 1963; Wigblad, 1998, 1995). Prior explanations of the closure productivity increase effect were derived from context specific factors such as vanishing management engagement and attention, a prevalent worker-collective, diminishing control and management over daily operations, deployed production planning, which can lead to liberation of individuals’ innovative driving force and the group’s collective experience through increased autonomy (cf. Bergman, 1995; Bergman & Wigblad, 1999; Lewer, 2001).

In its extreme, reconfiguration of productivity capacity can eventually lead to the closedown of an organization or a part of a corporation or business (Wigblad, 1995). Job layoffs are often an important component of many corporate restructurings, particularly in declining (and/or dying) organizations (Sutton, 1990). Layoffs may reflect a proactive attempt by the management to position the organization against expected challenges. Still they are usually reactive in nature; the organization may have no choice but to downsize and/or close down, in the face of eroding market share, rising competition and labor costs, and/or obsolete technologies (Kozlowski, et al., 1993; Ichniowski, Shaw & Prennushi, 1994).

Job layoffs are, for the employees, often the major consequence of a closedown. Layoffs strike the employees of the organization as they risk losing their job (e.g., Harris & Sutton, 1986). The members of a closing organization share a variety of fates. Closedowns demises, in contrast to workforce reduction, and displaces in the vast majority of cases all members. In a closing organization, all members must first cope with the threatened loss of their belonging to the organization and the identification with the role. That is the actual loss and displacement that follows and finally with the transitions to new roles (Gandolfi, 2006: 10ff; De Meuse, et al., 2004; De Meuse & Tornow, 1990; Fisher & White, 2000, Gombola & Tsetsekos, 1992; Marks & De Meuse, 2003; Mishra & Spreitzer, 1998; Noer, 1993; Reich, 1993).
The closedown of an organization also causes the loss of an important network of mutual obligations of the employees. It destroys and evaporates the major social arena in which members have spent much of their time (Marks & De Meuse, 2003). Because of this loss, a closedown is emotionally charged; it causes mourning, anger, depression, sorrow and fear of the unknown, the future, and the ambiguous present (Harris & Sutton, 1986; Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981; Sutton, 1987).

Corporate restructuring including either closedown or downsizing decision is threatening to the workers of the organization. A threat is experienced as a high degree of job insecurity and in specific for closedowns, expectancy or certainty of job loss. This can be defined as perceived powerlessness to maintain desired continuity in a threatened job situation (e.g., Brockner, 1988; Greenhalgh & Rosenblatt, 1984). Furthermore, workers react differently to job insecurity, and their reactions have consequences for organizational efficiency (e.g., Dawkins, et al., 1999; Gandolfi, 2006; Littler, et al., 2003a, b).

At the individual level of analysis, some pathology may exist. When placed in a threat situation, an individual’s most well-learned or dominant response may be emitted (De Meuse & McDaris, 1994; Weick, 1979). This response may be grossly inappropriate if the task or learning environment has changed. Similarly, decision-making groups may reduce their flexibility under a stress situation, sealing off new information and controlling deviant responses (Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981).

There may be a general tendency for individuals and groups, to behave rigidly in threatening situations, and that psychological stress, anxiety, and arousal often result in poor task performance and a tendency to persevere in well-learned courses of action. However, the performance effects of stress, anxiety, and arousal are not general (Staw, Sandelands & Dutton, 1981). Whether an individual performs a task well in a threat situation depends on performance relevant cues being central in the environment and on performance relevant responses being dominant for the individual. A rigid, but previously successful response may in fact be appropriate reaction to a threatening situation that does not involve major changes (Shaw & Barrett-Power, 1997).

Similarities between the individual-level effects of threat and effects on the group-level can be identified; one of the long existing accepted hypotheses of group behavior is that an external
threat draws group members tighter together and increases group cohesiveness. Some studies have found success on group tasks leading to positive affects toward other members of the group while task failure tends to reduce internal group cohesiveness (e.g., Staw, Sandelands & Dutton, 1981).

Closedowns also strike the employees as a group. Irritation, frustration, stress, arousal and anxiety can be a source to action, and collective reactions often come to management actions. The workers tend to be sensitive to both the actions and the information provided by the management. The mindset of the workers collective, prevail a tacit (silent) or outspoken agreement of what occupational norms that should exist (Bergman & Wigblad, 1999).

The threatened and actual loss of shared organizational arenas and subsequent role transitions require members to modify how they feel and think about themselves, their jobs, and their co-workers. There are many ways in which displaced members can respond to such affective and cognitive demands (Harris & Sutton, 1986). The basic idea underlying these concepts is that employee perceptions of fair treatment during the change process and participation in decision-making will have beneficial consequences for the work attitudes and well-being may even moderate the negative effects of downsizing-induced stress on such outcomes (Sverke & Hellgren, 2002, 2001a, b).

Successful managers often try to create credibility for the closedown as the climate setting can affect the anticipation of the closure, and through these actions legitimize the closedown. It has often improved relations and increased consultation between managers and employees, particularly with the manual shop stewards who represented the largest threat in terms of their ability and inclination to take industrial action (Hardy, 1990, 1987; Brown, Schmitt & Schonberger, 2004).

If we put closedowns is their larger context for the firm, closedowns can be seen as one particular form of retrenchment. Retrenchment is a short-term operating plan, traditionally applied in declining organizations in order to manage turnaround (Hardy, 1985; Hofer, 1980; Schendel, Patton & Riggs, 1976). Retrenchment is not a cause of turnaround performance but rather a consequence of steep performance decline during which a firm’s financial performance is extremely poor (Barker & Mone, 1994). During decline and closedowns,
Retrenchment programs sometimes developed in order to manage and handle the precarious situation (Barker & Duhaime, 1997; Barker & Mone, 1994; Robbins, & Pearce, 1992).

Retrenchment programs can be constituted in different ways. Some organizations develop these programs seriously and are socially responsible towards employees via educational programs, early retirement programs, job search aid, severance payments and bonus programs. Management in other organizations chooses to limit their social responsibility and manage the closedown with a minimum of supportive activities (Hardy, 1990; Sutton, 1987, 1983). Previous research have not in particular tried to distinguish different types of managerial settings and analyzing the consequences of different approaches in the process of closedown.

Retrenchment programs, as a supportive system for handling a closedown process, can in a short-term perspective positively affect the individuals and their motivation for maintaining a certain level of productivity. A retrenchment program, in a long-term closedown process, can have a diminishing effect on the individuals’ motivation for maintaining the level of productivity. Still, in situations where the management have arranged a socially responsible retrenchment program it has been evident that more positive attitudes evolve among the workers toward the closedown process, than in cases where such program was not available. On the other hand, in situations where the management does not provide such supportive retrenchment program, this is a source of conflict and negative perceptions among the workers towards management and the closedown.

The literature on plant closure is scattered and diverse. It consists of traditional labor market and community studies (e.g., Newcastle, 1980); social and regional geography studies (e.g., Kirkham, Richbell & Watts, 1999; Massey & Meegan, 1982; Watts & Kirkham, 1999); and limited economics literature (e.g., Bernard & Jensen, 2003, 2002). Most of these studies have focused on the wider effects of closure. In the domain of organization studies, plant closures have been merged the literature on decline or downsizing.

In conclusion, there is a lack of theoretical conceptions and frameworks for analyzing closedowns. Previous research on closedowns has been limited and there is still a lack of theoretical and/or analytical frameworks for studying such processes and seeking both
explanations to, and a better understanding of, the unfolding of the closedown processes (e.g., Bergman & Wigblad, 1999; Lewer, 2001; Sutton 1987; Wigblad, 1995).

**Research questions and purposes**

The overall research questions are formulated as follows:

- How does productivity develop during the process of closedown?
- What is the dominant pattern of explanations of productivity development during the process of closedown?

These research questions serve as the foundation for this thesis. The phenomenon of productivity effects during the process of closedowns is the central issue.

The overall purpose of this thesis is to contribute to fill the knowledge-gap regarding research on closedowns. Specifically, analysis closedowns to outline a pattern of explanations of contributing factors that enable a better understanding of the phenomenon, including the development of a theoretical framework.

This broadly defined overall research question and purpose also serves as the foundation for the development of the detailed research questions as outlined and discussed below.
The research questions and purposes for each of the specific the papers are formulated as follows:

<table>
<thead>
<tr>
<th>Paper #</th>
<th>Research question</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How can increased productivity development under extreme conditions, such as organizational closedowns and threat situations, be theoretically explored?</td>
<td>To develop a theoretical basis for analysis of organizational closedowns.</td>
</tr>
<tr>
<td>2</td>
<td>What happens in the organization during a closedown process?</td>
<td>To develop detailed knowledge of the dynamics of emerging processes during the closedown process, to explore the impact of an applied socially-responsible management approach, and how the dialectics between management and the workers affects the productivity development.</td>
</tr>
<tr>
<td>3</td>
<td>In what specific threat and closedown contexts can increased productivity be anticipated?</td>
<td>To extend empirical knowledge by exploring multiple-cases of closes, where cases have differing managerial approaches to closedown.</td>
</tr>
<tr>
<td>4</td>
<td>How can the performance development during the closedown process be understood in a holistic perspective?</td>
<td>To propose and test a holistic approach to analyzing the Closedown effect, as an alternative to the mainstream explanations which are based on analyzing single cause-effect relations.</td>
</tr>
</tbody>
</table>

Table 2 Detailed research questions and purposes of this thesis

Assessment of theoretical studies that position closedown addressed the first research question “How can increased productivity development under extreme conditions, such as organizational closedowns and threat situations, be theoretically explored?”. This theoretical positioning provides a foundation for the perspective of decline this research takes. The first research question is the focus of the paper, Recontextualizing the Hawthorne effect. To increase knowledge about productivity development under extreme conditions such as organizational closedowns and threat situations, this paper recontextualizes the Hawthorne effect from an organizational closedown perspective. This paper contributes to the emerging literature on decline as well as to a better understanding of the Hawthorne effect.
The intent of the second research question on “what happens in the organization” is to focus on productivity development over time, from the initial closure threat or decision to the actual closedown. Periods are identified and a fine-tuned analysis developed. This is the scope of the second paper, *When the Lights Go Out*. It explores the dialectics between management and the workers, the effects of socially-responsible management approach, and how these affect productivity development. It provides a time-framed, process based, empirical narration and a fine-tuned analysis of critical events in a closedown case. This paper therefore advances understanding of how a closedown process unfolds and identifies how critical events influence productivity development. This understanding is then used to develop a theoretical model that considers various closedown phases as anteceding variables.

The third research question, “In what specific threat and closedown contexts can increased productivity be anticipated?” addresses the closedown’s managerial setting. Since previous research on the Closedown effect only identified a socially responsible approach by management, this work makes an overall contextual distinction between is two principally different managerial approaches: socially responsible and a non-socially responsible. It assesses whether the closedown effect could be expected to appear in both. This is explored in the third paper, *Pyrrhic Victories – Anticipating the Closedown effect*. This paper therefore contributes new empirical cases of non-socially responsible closedown. Moreover, it extends the scope of previous empirical by statistically testing the significance of the Closedown effect. The closedown effect of continuously increasing productivity is sustainable in both managerial contexts, even when there is a long closedown period.

The fourth research question “How can the performance development during the closedown process be understood in a holistic perspective?” shapes a holistic perspective of the puzzling phenomenon. Since previous research on single-plant closures primarily focused on simple explanations of Closedown effect, the fourth paper proposes and tests such a holistic approach. Its theoretical framework is based on Buckley’s (1967) system theory, where a (modified) cybernetic model if applied. Through this theoretical elaboration, depicting changes in organizational and economic structure, this paper contributes an understanding of how productivity equilibriums are broken and reshaped.

These research questions and research intent arose from the fact that the closedown effect was a newly identified phenomenon (cf. Bergman & Wigblad, 1999), and so research theoretically
and empirically limited in scope, and fragmented. This lead to my explorative research approach (See chapter 3.1). Exploration enabled a range of inter related issues to be addressed: from establishing a theoretical framework and deepened empirical case work.

**Interrelationship between the research questions**

There is an interconnection and interrelationship between the four detailed research questions of this thesis. Their common aspect is an exploration of productivity effects during the process of closedown. The first research question, that is handled in the first paper, *Recontextualizing the Hawthorne effect*, serves as the foundation for the establishment of a theoretical base for studies on closedowns. This theory is then subsequently elaborated in all the remaining papers. The elaboration made in the second paper, *When the Lights Go Out*, is a link to previous research in other fields, which deepens conceptualizations, through its fine-tuned analysis. This extended theoretical elaboration results in both an empirical model as well as a discussion on the theoretical implications for further research on closedowns. This new elaboration serves as the foundation for the third paper, *Pyrrhic Victories – Anticipation of the Closedown effect*. Here the specific theoretical and empirical elaboration is the impact of non-socially responsible management approaches in handling the closedown process. Its multiple case study and statistically test the appearance of the Closedown effect particularly served as a foundation for assessing the generalization of the phenomenon.

The fourth paper, *A Holistic Approach to the Productivity Paradox*, is a major theoretical elaboration of the closedown effect. It is based on Buckley (1967) systems theory model approaches. It transforms the reflectively simple, somewhat static, cause and effect explanations to the Closedown effect reported in the *When the Lights Go Out* and *Pyrrhic Victories – Anticipating the Closedown effect*. This development is not only more holistic but also considers dynamic much more extensively.

Some delimitations are made in order to pin down the domain of research: the work focuses on the single-plant that is closed and its overall productivity, considering the blue-collar workers that are affected by the closure, and their reactions and actions during the closedown process. These delimitations enabled this thesis to draw on previous closedown research, which had the same delimitations.
This clear delimitation enables a clear contribution to be made since work by other researchers on closedown has a different scope and emphasis. Examples include multi-plant closures (e.g., Arthur, 1994, Becker & Huselid, 1998; Chang & Singh, 1999, Datta, Guthrie & Wright, 2003; Dyer & Reeves, 1995; Hanna, 1988, Youndt et al., 1996), HRM policies (e.g., Koch & McGrath, 1996) manpower factors, (e.g., Kirkham, Richbell & Watts, 1999), managing public relations (Carroll, 1984), technology use (Colombo & Delmastro, 2001), industry effects (Dess, Ireland & Hitt, 1990), High involvement work practices, turnover and productivity (Guthrie, 2001), effects of HRM practices (Ichniowski, Shaw & Prennushi, 1997; MacDuffie, 1995), reemployment as a consequence of firm closing (Rocha, 2001) and high-commitment management and workforce reduction (Zatzick & Iverson, 2006).

Moreover, since productivity was the focus, it makes practical sense to study cases where empirical data is available: productivity measures are more often applied in manufacturing departments and blue-collar productivity measures are much more straightforward to assess in comparison to productivity measures for white-collar workers in administrative functions (See chapter 2.2).
Contributions from this thesis

In the following table I summarize and outline the main contributions from the papers as well as the thesis. The major contributions of this thesis are listed as follows:

<table>
<thead>
<tr>
<th>Paper</th>
<th>Contributions</th>
</tr>
</thead>
</table>
| Recontextualizing the Hawthorne effect                              | • Theoretical positioning of closedown research and productivity  
• Expanded understanding of the Hawthorne effect, from an open systems perspective.  
• Indicating that threat under extreme conditions can be a driver of performance and productivity.  
• Indicating that the Hawthorne, Horndal and Closedown effects are primarily human driven. |
| When the Lights Go Out                                               | • A process based, in-depth fine-tune analysis of a closedown process.  
• Identification of critical events influencing fluctuations in productivity during the closedown process.  
• Proposition of a theoretical model that takes into account and distinguishing productivity enhancing effects as well as antecedent variable to increased productivity. |
| Pyrrhic Victories – Anticipating the Closedown effect                | • Extension of the empirical domain of closedown cases, analyzing non-socially responsible managerial settings to productivity development.  
• Statistically testing and proving a significant Closedown effect in non-socially responsible closedown cases.  
• Categorizing scheme for closedown cases, taking into account the managerial setting and time-frame.  
• Definition and distinction of different analytical phases during the closedown process. |
| A Holistic Approach to the Productivity Paradox                     | • Outlining a dynamic and holistic model to the Closedown effect.  
• Analysis of a closedown case from a holistic perspective.  
• Elaboration on the economic and institutional reordering consequently following a closedown decision. |
| Thesis                                                              | • Identification of potential explanatory factors to the Closedown effect.  
• Outline of a pattern of explanatory factors to the Closedown effect.  
• Practical implications from studies on closedown.  
• Propositions for a future research agenda on closedowns. |

Table 3 Contributions from this thesis

Detailed descriptions of the contributions from each part of this thesis can be found in each specific part of the papers and the thesis.
2 A note on the theoretical background

This section reviews the literature on downsizing, closedowns, productivity and productivity measures. Its purpose is to pin down and specify its theoretical demarcations and applicability for this thesis. An assessment of how both the downsizing and closedown literatures can be integrated, considering their overlap, is then made.

Research on decline contexts has focused on trying to seek causal explanations to organizational effectiveness and lack thereof (e.g., Cameron, Sutton & Whetten, 1988). Broadly, explanations in organizational, political, cognitive and structural perspectives have been sought (e.g., Cameron, Sutton & Whetten, 1988). Research has also dealt with causal explanations considering organizational aspects (Krantz, 1985) and organizational dysfunctions (Brockner, Davy & Carter, 1985).

It is possible to identify three general streams of research within the field of decline. Firstly, a life cycle perspective that accounts for birth, growth and primarily decline phases of organizations and why some organizations face decline (e.g., Cameron, 1994; Cameron, Sutton & Whetten, 1988; Greiner, 1972; Katz & Kahn, 1978; Kimberly, 1979). A secondly stream focuses on the individual perspective, focusing on the negative aspects individuals face during decline e.g., Cameron, Sutton & Whetten, 1988; Levine, 1978). Another stream of research focuses effectiveness and efficiency (e.g., Goodman, et al., 1977; Redshaw, 2001).

Nonetheless, the decline research field has a broad content and can be seen as an umbrella under which both downsizing and closedown research can be identified. Decline can, on an aggregated level, be associated to a generic term for downturns. This refers to decline on multiple levels of analysis, including industry, sector, corporate, business, asset and routines.

In considering the issue of closure, within organization studies the broadest streams of research relate to ‘organizational decline’. Research on decline has over the years provided a multitude of conceptual and organizational frameworks. Some of the most frequently cited frameworks have dealt with conceptions of defining organizational decline (e.g., Cameron, Sutton & Whetten, 1988: 10ff.), organizational effectiveness (Cameron & Whetten, 1983, Goodman et al., 1977), organizational dysfunctions (Cameron, Freeman & Mishra, 1993;
Cameron, Whetten & Kim, 1987; DeWitt, 1993), organizational mortality (Carroll & Delacroix, 1982), organizational ecology (Hannan & Freeman, 1975, 1977, 1978, 1984, 1988, 1989), administrative consequences of decline and downsizing (Ford, 1980), downsizing as a consequence of change (Dess, Ireland & Hitt, 1990; Freeman, 1993), consequences of downsizing (Freeman & Cameron, 1993), determinants of work-force reduction (Greenhalgh, Lawrence & Sutton, 1988, Sutton & D’Aunno, 1992), threat-rigidity under decline (Staw, Sandelands & Dutton, 1981), bankruptcy (Altman, 1971; Sutton & Callahan, 1987), integration of literature on organizational decline (Weitzel & Jonsson, 1989), environmental decline and organizational responses (Zammuto & Cameron, 1985). However, these streams of research tend to be more macro in orientation and have rarely focused on the processes of closedown within a given individual organization and its specific context.

2.1 A note on the comparability between downsizing and closedown literatures

To contrast the negative effects downsizing has on productivity with the positive productivity development seen in closedowns, this section raises a number of issues found in the literatures on closedown and downsizing. It draws on Littler and Hansson (2007)’s recent work.


An assessment of the research literature which has ‘closure’ (or variants) in the title or abstract, reveals only limited research examining closure processes and their influences on organizational performance or human relations. Furthermore, within organization studies, closures are assimilated into the literature on organizational decline or downsizing, often
without considering the appropriateness of this assimilation. This is neatly illustrated by Brown, Schmitt and Schonberger’s study of a closure in Northwest USA, where no distinction is made between closure and layoffs (Brown, Schmitt & Schonberger, 2004).

There has been a series of studies on multi-plant closures and productivity effects in the remaining organization (e.g., Arthur, 1994; Becker & Huselid, 1998; Chang & Singh, 1999; Datta, Guthrie & Wright, 2003; Dyer & Reeves, 1995; Kirkham, Richbell & Watts, 1999; Koch & McGrath, 1996; MacDuffie, 1995; Youndt et al., 1996). I raise a theoretical issue here: from the perspective of the firm, such closures are a *downsizing*; from the perspective of the employees however such closures are a *closure*. For example, when Boston Scientific closed its facility in the Seattle, only three or four employees were re-hired by the corporation (Brown, Schmitt & Schonberger, 2004). For the vast majority of employees, closure equaled employment termination. Thus, while the boundaries between ‘closedown’ and ‘downsizing’ overlap, in order to make sense of the processes, the employees’ perspective needs to be considered as well as the level of restructuring - particularly when human resource issues are of concern.

Closure can occur under varying contexts. First, and most simply, the closure can be a single facility (plant, office or R&D facility) closure linked to the demise of the company. However, many closures are multi-facility closures. Closures can occur on different levels of restructuring; corporate, business, assets and routine levels. Nonetheless the majority of existing research has neglected to frame both the level of analysis as well as the level of restructuring. I consider these distinctions in a later section.

There has only been a limited work that focuses on how the process of closedowns unfolds. The *Pyrrhic Victories – Anticipating the Closedown effect* paper develops a schematic pattern of closedown processes. It identifies and analyzes two distinct periods: the advance notice period, and the countdown period. Together these two periods define the closedown process. When a closedown decision is announced, certain dynamics come into play. At first there are negative psychological reactions among the workers, which generate negative performance outcomes, which decrease productivity. As negotiations regarding the agenda and time-table for the closedown are set, the facility enters the countdown period, under which productivity increases.
Compared to commonsensical expectations, such performance outlines appear to be counter-intuitive for researchers. So, researchers have clutched at a range of ad hoc factors to explain these outcomes. ‘Best practice’ management in that specific context is one example (Brown, Schmitt & Schonberger, 2004). Another is ‘excellent’ retrenchment programs, which involve socially responsible management approaches in handling the closedown process, including educational programs, early retirement programs, job search aid, severance payments and bonus programs (Bergman & Wigblad, 1999; Hardy, 1987, 1990; Lewer, 2001). However, when closure is managed in a non-socially-responsible way similar positive productivity increases are still observed (Hardy, 1985, 1990; Sutton, 1987, 1990).

Other ad hoc explanations focus on employee motivation. Clearly, the productivity outcomes are dependent on workers’ motivation and effort, and thus sensitive to management actions, information provided, and the provision of a ‘credible’ closure story. One line of argument is that diminishing control and management linked to closedown leads to an increase in workers’ job autonomy. This provides opportunities for development of innovative skills, reduction of job-rotation and informal leadership and self-organizing work groups, while planning is deployed to the lower hierarchal levels and the levels of standardization and formalization of work decline (Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Lewer, 2001). In addition, some studies suggest that workers in closure contexts have maintained significant job pride, striving to show that the management made a wrong decision in the hope for prolongation of activities at the plant or facility (e.g., Bergman & Wigblad, 1999; Lewer, 2001).

The problem with all these ad hoc explanations is that they are not theoretically grounded in the broader literature. In particular, they do not consider the downsizing literature and its contrary stream of conclusions and interpretations.

In the organizational and managerial literature, there exists no common definition for the term downsizing. As downsizing became more prevalent from the mid-1980s, the term was applied to a broader range of managerial efforts to improve the organization. Managers have generally used downsizing as a loose term to cover all types of organizational strategy that resulted in layoffs. Thus, the term downsizing was used interchangeably with such terms as restructuring, reengineering and outsourcing. Nonetheless, academic authors continue to limit the term
downsizing to refer to the specific phenomenon of intentional workforce reduction for the purpose of improving efficiency within the organization.

The downsizing literature spans events in the 1990s. It contains a commonsensical argument correlating downsizing and productivity is: ‘Productivity measures the amount a worker can produce in an hour (or some time-period). Retrench workers, shrink the organization and you will lose their output. But if the loss of input worker hours falls faster than the loss of output, then productivity will increase.’ Bloated bureaucratic organizations can shed fat and lose no useful output was the mantra of early 1990s advocates of downsizing (cf. Roach, 1991). Some of the prescriptive downsizing literature suggested that downsizing reduces operating costs, eliminates unnecessary levels of management (delayering), streamlines operations, enables organization to reduce excess capacity, enhance overall effectiveness and makes the company more competitive (e.g., Collins & Rodrik, 1991; Hedberg, Nystrom & Starbuck, 1976; McKinley, Sanchez & Schick, 1995; Neinstedt, 1989).

Let’s however examine the evidence of the actual effects of downsizing on performance. One conclusion of the 1990s downsizing literature was that the effects of downsizing on productivity is mediated by so-called ‘survivor syndrome’. Survivor syndrome can be defined as the mixed set of psychological states and behaviors exhibited by employees who remain in the organization after the process of downsizing.

Little attention was paid to the downsizing survivors in organizational research until Brockner and colleagues conducted studies on the subject in the mid-1980s (cf. Brockner, 1992, 1988; Brockner et al., 1985, 1986a, b, 1987, 1988a, b, 1995). Brockner et al. (1988a: 215) argued that layoffs engender a variety of psychological states in survivors - guilt and positive inequity, anger, relief, and job insecurity. Secondly, these psychological states have the potential to affect survivor’s work behaviors and attitudes, including level of performance, motivation, job satisfaction and commitment. Such arguments were based on equity theory and organizational stress theory (Brockner et al., 1988a: 219-220). Management sometimes believed that surviving employees will be so relieved to still have a job that they will improve productivity levels will improve. However, any relief felt by survivors is often overwhelmed by the effects of survivor syndrome (Boroson & Burgess, 1992; Caudron, 1996; Leana & Feldman, 1992; Moskal, 1992; Lincoln, 1995; Rubach, 1995: 25; Skopp, 1993).
To operationally define the extent of survivor syndrome it is necessary to construct an index to measure it. In the 1980s and 1990s literature this was done in various overlapping ways. Most indices utilized some mix of job dissatisfaction, staff motivation; staff commitment, morale among staff, concern about job security, perceived promotional opportunities, and so on. Most research showed these aspects converged significantly in a post-downsizing context. The data indicates that any link between downsizing-performance is problematic, with job insecurity appearing as the key factor driving the processes. The majority of the literature indicates that downsizing can have negative effects in organizations including reduced profits, slowing divided growth, lowering stock prices, decreasing employee morale and satisfaction, increasing tardiness, absence and turnover and escalating employee workload and stress (e.g., Chalos & Chen, 2002; De Meuse, et al., 2004; De Meuse & Tornow, 1990; Fisher & White, 2000, Gandolfi, 2006; Gombola & Tsetsekos, 1992; Mishra & Spreitzer, 1998; Noer, 1993; Reich, 1993). Furthermore, studies on the financial consequences of downsizing raise problematic restructuring costs associated with downsizing activities (e.g., Atwood, et al., 1995). These include deteriorating shareholder value (e.g., Appelbaum, et al., 1999), effects of severance payments (e.g., Barker & Mone, 1994; Barker & Duhaime, 1997; Downs, 1995; Robbins & Pearce, 1992), failure in reducing costs, and the lack of significant increase in ROA and return on common stock (e.g., Cascio, 1993, 1991; Cascio, Young & Morris, 1997).

During the 1980s three concepts emerged to express shifting employee attitudes, emotions and orientations to work. These served to structure a significant body of academic work during the 1990s. The three concepts were ‘the psychological contract’; ‘survivor syndrome’ and, to a lesser extent, ‘merger syndrome’. Unlike earlier decades all three concepts were not prescriptive, but *descriptive*. They represented an attempt to capture some of the organizational changes that were going on during the decade. I will not attempt in this review to exhaustively define the concepts, rather I attempt to briefly contextualize the concepts as they are essential to the theoretical argument.

Apart from the exchange of wages and effort within organizations, there is a broader set of relational exchanges - these set of exchanges are the so-called 'psychological contract'. Downsizing, delayering and labor detachment strategies result in employers framing a new psychological or social contract, explicitly or implicitly, with employees. As the *Wall Street Journal* headlined in 1994: “The social contract between employers and employees, in which companies promise to ensure employment and guide the careers of loyal troops, is dead, dead,
dead.” The ‘death of corporate loyalty’ was widely proclaimed (e.g., Moskal, 1993; Patch & Rice, 1992; Reichheld, 1996: 25; Schendel, Patton & Riggs, 1976; Sorohan, 1994; Traub, 1990). The package of workforce changes involved squeezed out loyalty, and compressed commitment. During the 1990s a large literature developed on this changing 'psychological contract' (Barker & Mone, 1994; Barker & Duhaime, 1997; Guest, 1998; Noer, 1993; Robbins & Pearce, 1992; Rousseau & McLean-Parks, 1993; Sparrow, 1996, 1998).

Some authors (e.g., Collin, 1996) have argued that the erosion and permeability of job roles and the decline of a sense of owning a job combined with the loss of career trajectories can lead to a loss of identity at a psychological level. The removal of hierarchy can be costly for individuals. Under the command model of organization the hierarchy functioned not only as a co-ordination mechanism, but also a psychological defense against anxiety (Schein, 1990). Individuals in the new organizations may be subject to higher levels of anxiety because they have higher levels of responsibility, and the boundaries of their roles are both ambiguous and fluid (Livian & Burgoyne, 1997; Littler et al., 1994, 2003). When placed in a threat situation, there may be a general tendency for individuals to behave rigidly, sealing off new information and reducing their flexibility. Stress, anxiety and arousal are the immediate individual reactions to threat (e.g., Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981).

The notions of a changing psychological contract led to a discussion of survivor syndrome in the literature. From the employee side, the post-downsizing attitudinal and emotional effects were labeled ‘corporate survivor syndrome’ and declines in organizational commitment were widely reported in the research literature. Typically, this involved a two/three year employee adjustment period (Littler, 1999, 2000; Noer, 1983). There is some agreement that job insecurity is a key factor in relation to organizational commitment, job satisfaction and job behavior (Burke & Nelson, 1998: 34-6). The causal impact of job insecurity has been the subject of a number of studies (e.g., Ashford, Lee & Bobko, 1989; Davy et al., 1997; Greenhalgh & Sutton, 1991, Greenhalgh, Lawrence & Sutton, 1988; Rosenblatt & Ruvio, 1996; Roskies & Louis-Guerin, 1990; Roskies, Louis-Guerin & Fourier, 1993). Greenhalgh & Rosenblatt’s (1984) model of job insecurity showed it to be related to lower work effort, lower productivity and adaptability, intention to quit and resistance to change, among other negative outcomes.
In conclusion, the organizational and social-psychological literature of the 1990s generally indicates that restructuring, downsizing, mergers and closures should be marked by similar employee responses.

Evidence from the closure literature, where closures have long rundown periods, show however high productivity, quality output, worker cooperation and commitment. This is a contrast to the oft-cited dynamics of downsizing. Downsizing is associated with negative performance outcomes (e.g., Cameron, Freeman & Mishra, 1993; De Meuse, Bergmann & Vanderheiden, 1997; Mishra, Spreitzer & Mishra, 1998) low worker commitment, (e.g., Mroczkowski & Hanaoka, 1997; Perry, 1986; Zatzick & Iverson, 2004), and the ‘dirty dozen’ (Cameron, 1994).

The ‘dirty dozen’ represents a set of characteristics of negative attributes associated with decline and downsizing. Here the ‘dirty dozen’ represents some of the oft-cited and frequently referred attributes of downsizing activities. Summary adopted from Cameron (1994):

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralization</td>
<td>Decision-making becomes centralized to higher levels of organizational hierarchy.</td>
</tr>
<tr>
<td>Short-term, crisis mentality</td>
<td>Long-term planning is neglected and the focus is shifted towards immediacies.</td>
</tr>
<tr>
<td>Loss of innovativeness</td>
<td>Trial-and-error learning is curtailed. Less tolerance for risk and failure associated with creative activity.</td>
</tr>
<tr>
<td>Resistance to change</td>
<td>Conservatism and threat-rigidity response lead to a protectionistic stance.</td>
</tr>
<tr>
<td>Decreasing morale</td>
<td>Infighting and “mean mood” permeate the organization.</td>
</tr>
<tr>
<td>Politicized special interest groups</td>
<td>Special interest groups organize and become more vocal. The climate becomes politicized.</td>
</tr>
<tr>
<td>Non-prioritized cutbacks</td>
<td>Across-the-board cutbacks are use to ameliorate conflicts.</td>
</tr>
<tr>
<td>Loss of trust</td>
<td>Leaders lose the confidence of subordinates and distrust among organizational members increases.</td>
</tr>
<tr>
<td>Increasing conflict</td>
<td>Fewer resources result in internal competition and fighting for a smaller pie.</td>
</tr>
<tr>
<td>Restricted communication</td>
<td>Only good news is passed upward. Information is not widely shared because of fear and distrust.</td>
</tr>
<tr>
<td>Lack of teamwork</td>
<td>Individualism and disconnectedness make teamwork difficult. Individuals are not inclined to form teams.</td>
</tr>
<tr>
<td>Lack of leadership</td>
<td>Leadership anemia occurs as leaders are scape-goated, priorities are unclear, and siege mentality prevails.</td>
</tr>
</tbody>
</table>

Table 4 The dirty dozen

The existing data relating to closures and downsizing is subject to several limitations and it could be argued that any differences in performance outcomes may be ‘artifactual’. In other words, they are the outcome of differing samples and measures used or of specific and contextual factors. Let us consider some of the obvious differences.
The level of analysis in research on closures and downsizing differs. *First*, researchers that have observed the closedown effect, have, in general, analyzed single facilities whereas research on downsizing has tended to analyze outcomes at the firm level. It has already noted that there can definitional problems here, and that closures are, from the perspective of a multi-facility firm, a downsizing. Nevertheless, this need not change the force of the argument: it simply changes the terms, so that I am comparing ‘downsizing involving closure’ versus ‘downsizing not involving closure’. In some ways, it strengthens the argument.

*Secondly*, the research on closures has been characterized by case studies, with some of the plants in the closure studies in relatively isolated communities. Consequently, the process of closure receives more publicity linked to a sense of community responsibility. While this is the case, it does not appear sufficient to explain the differences. Indeed, the argument can be turned on its head – downsizing in isolated community workplaces should be marked by a stronger employee desire to keep the show on the road.

*Thirdly*, many of the 1990s downsizing studies focused on white-collar workers – banking, finance, communications (Dawkins, *et al.*, 1999). Most of the cases observed in the closedown context involve blue-collar workers. However, little research has been done on white-collar workers in closedown contexts.

*Fourthly*, there may be a simple management focus explanation. During downsizing, management is focused on selection and managing the lay offs. During closures, management is focused on keeping people so that production does not suddenly cease or health and safety issues become crucial. Consequently, in the latter case, there may be increased pay for a period as an incentive. In several closure cases there has been a retrenchment program for managing the closure process including severance payments, production bonuses, education programs, early retirement programs and job-search aid. These retrenchment programs may have an initial effect for the explanation of the increased motivation and productivity. However and based on the arguments from the *When the Lights Go Out* paper, the importance of the retrenchment program decreases through the closure process. Moreover, many downsizing programs parallel these initiatives. Nevertheless, more research is needed here to untangle cause and effect.
The limitations of the existing data do not enable an evaporation of the paradox. Rather the paradox can be used as a lens to understand a range of effects. Not only is there a paradox in the literature regarding the outcomes of each process but also a confusion of the demarcations between closedown and downsizing. That is, it is not clear in the majority of the downsizing research on what level the restructuring is taking place, or if it is just involves work-force reduction and to what degree the continuation of business is set. The firm level of analysis is the most frequently applied level of description and analysis. Regarding the referred literature on closedowns it is clearer that it primarily focuses on single-facility closures and measures on performance outcomes in the closing facility and does not take into account the consequences at the corporate level.

Thus, summarizing the closedown process and contrasting it with the downsizing process depict some of the key relations in the Closedown effect. Firstly the uncertainty argument, where closedown places everyone in the same job loss situation and so there are no survivors and hence no survivor syndrome. Secondly, regarding innovation, longer-term, or fundamental, innovation is removed from the equation in a closedown situation. As reported in several studies, during downsizing the loss of key workers and removal of organizational slack often significantly diminishes creative potential (Amabile & Conti, 1999; Fisher & White, 2000). However, informal organizational changes often occur in a closure. There may be a reduced degree of formalization, and an increased degree of decentralization. Further, the structural changes provides an increased degree of relative job autonomy due to diminishing operations management and production planning shifting to lower levels of hierarchy of the organization. As workers operative space increases, it provides opportunities for the development of innovative skills and day-to-day rationalizations. That is, ad hoc, task-based innovations.

Regarding the flexible labor force argument, flexibility in the labor force tends to increase during the closedown process. As reported in several studies, as management control over daily operations diminishes, workers find increased operative space and job autonomy, informal leadership evolves and work-groups becomes self organizing. Job rotation tends to decrease and workers become focused on specific production tasks, as well as tend to be keener on helping each other out when problems occur. During the closedown process the worker collective initially tends to become strengthened, whereas it over time has a
diminished importance and individualization grows stronger (e.g., Hardy, 1985; *When the Lights Go Out* paper).

### 2.2 A note on productivity and labor productivity measures

To pin down the Closedown effect, which is the topic of this thesis, and focus on it, this section discusses productivity, labor productivity and productivity measures.

Performance measures are often discussed, but rarely defined (Hannula, 1998). Neely, et al., (1997, 1995) describe performance measurements as the process of quantifying action, where measurements is the process of quantification and action correlates with performance.

Performance measurements are the foci for several studies and are often used to increase competitiveness and profitability of manufacturing companies (Tangen, 2003). However, performance measurements are a multi-dimensional concept and can on a basic level be distinguished between task and contextual performance (Borman & Motowidlo, 1993). Task and contextual performance can be distinguished at the conceptual level (Sonnenstag & Frese, 2002) and there is also increasing evidence that these two concepts can be separated empirically (e.g., Morrison & Phelps, 1999; Morrison & Robinson, 1997; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996; Williams & Anderson, 1991).

Additionally, task performance and contextual performance factors such as job dedication and interpersonal facilitation contributes uniquely to overall performance in managerial jobs (Sonnenstag & Frese, 2002). Moreover, contextual performance is predicted by other individual variables, not only task performance. Abilities and skills tend to predict task performance while personality and related factors tend to predict contextual performance (Borman & Motowidlo, 1997; Hattrup, O’Connell & Wingate, 1998; Motowidlo & Van Scotter, 1994). Performance is not stable over time. Variability in performance reflects (1) learning processes (2) long-term and temporary changes.

Performance changes as a result of learning. Studies showed that performance initially increases with increasing time spent in a specific job and later reaches a plateau (Avolio, Waldman & McDaniel, 1990; McDaniel, Schmidt & Hunter, 1988; Quiñones, Ford &
Teachout, 1995). Moreover, the processes underlying performance alter as a consequence of long-term changes and temporary changes. During early phases of skill acquisition, performance relies largely on controlled processing, the availability of declarative knowledge and the optimal allocation of limited resources, whereas later in the skill acquisition process performance largely relies on automatic processing, procedural knowledge, and psychomotor abilities (Kanfer & Ackerman, 2000).

Performance changes over time are not necessarily invariable across individuals. Empirical evidence indicates individuals differ with respect to patterns of intra-individual change (Hofmann, Jacobs & Gerras, 1992; Zickar & Slaughter, 1999). These findings indicate that there is no uniform pattern of performance development over time.

Total productivity is the most comprehensive approach to productivity at the firm level. Total productivity includes all the output generated and all the input used to generate output (Uusi-Rauva & Hannula, 1996). Measures of total productivity are seldom used due to the problems of applicability in practice. Most organizations have a variety of different inputs and outputs and they are difficult to convert accurately into common units and derive a single value (Hannula, 1999). For that reason partial productivity measures are more often applied.

Partial productivity measures are often more easy to measure and calculate, often represented by labor productivity (output per working hour or output per employee) (Sumanth, 1994). Much criticism has been aimed at this way of calculating productivity. Suh (1990) argues that labor productivity is a useless measure in modern manufacturing operations, since the total direct cost is becoming a smaller fraction of the total manufacturing cost. However and arguably, productivity measurement can be useful in feedback of performance to the workers as they are easy to understand (Bernolak, 1997). This is because productivity measures often take into account variables such as time and precision in delivery.

On the individual performance level authors agree that when conceptualizing performance one has to differentiate between action (i.e. behavioral) aspect and an outcome aspect of performance (e.g., Kanfer, 1990). The behavioral aspect refers to what an individual does in the work situation. Not every behavior is subsumed under the performance concept, but only behavior which is relevant for the organizational goals (Campbell, et al., 1993: 40) Thus, performance is not defined by the action itself but by judgmental and evaluative processes (cf.
Ilgen & Schneider, 1991; Motowidlo, Borman & Schmit, 1997). Moreover actions that can be scaled are considered to constitute performance (Campbell, et al., 1993). Another measure of productivity is the logarithmic sales per employee (e.g., Guthrie, 1999; Huselid, 1995; Koch & McGrath, 1996).

It becomes evident that measurement of labor productivity is a complex issue and ideas about performance measurement have radically changed over the years (c.f. Arnold, 1991; Grossman, 2003; Jackson & Petersson, 1999; Tangen, 2003; Uusi-Rauva & Hannula, 1996). Most organizations have a variety of different inputs and outputs and they are difficult to convert accurately into common units and derive a single value (Hannula, 1999). For that reason partial productivity measures are more often applied. In relation to labor, single factor productivity assumes that labor inputs are homogeneous and easily measured. This often is not the case as the quality of labor inputs varies according to the characteristics of labor (Guthrie, 2001; Zatzick & Iverson, 2004). There are particular problems of measuring labor productivity for workers and managers (e.g., Armitage & Atkinson, 1990; Brown & Hughes, 1991; Cascio, 1991; Green, 1993; Niland, Riggs & Felix, 1988; Sibson, 1994.).

Productivity can be defined as the internal efficiency of the organization or other object to be measured. A more precise definition of productivity is the following: output divided by the input that is used to generate the output. Output consists of products of services and input consists of materials, labor, capital, etc. Productivity is affected by the quantities of inputs and outputs, but also by the qualities of inputs and outputs (Uusi-Rauva & Hannula, 1996; Samuelson & Nordhaus, 1989). The main difference between the concepts between productivity and profitability is that the profitability deals with costs and revenues, whereas productivity deals with the amounts of input and output (cf. Kemppilä, Laitinen & Mättenen, 1995).
Put as an equation:

\[ P_{0,n} = \frac{O}{(M, L, C, \varnothing)} \]

P = Productivity
O = Output (e.g., Products or services)
M = Material
L = Labor
C = Capital
\( \varnothing \) = Other (e.g., energy, facility)

Evidently from the encountered empirical cases that are outlined in this thesis as well as experiences from previous research it has been a complex issue to measure productivity.

Empirical evidence as well as experience from previous research on closedowns, shows that local productivity measures are often quite simple. By measuring inputs versus outputs, and considering their development over time, provides a longitudinal measurement of productivity development. For time-based measures to be straightforwardly obtained they should follow the following principles (cf. Jackson & Petersson, 1999).

- Easy to measure
- Easy for everyone to understand
- Facilitating comparisons between workshops
- Facilitating comparisons between countries (independent of currencies)
- Take into account, in operative manufacturing, that there is approximately a linear relationship between time and cost.

As noted above, researchers advocate different types of measures of productivity, which tend to be more complex to measure. Perhaps they may be more accurate. However, the experiences from the empirical case studies in this thesis indicate that such complex measures have received little attention in every-day business life. Instead, simplicity is the rule.
2.2.1 A note on productivity measures in closedown contexts

The Closedown effect has been observed as an empirical phenomenon by other researchers. Such productivity increases in closedown contexts surprised both researchers and practitioners.

Previous research has constrained its ambition to make applied measures of productivity development. A review of the literature on this matter indicates that it is primarily output/input measures that have been focused (e.g., Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Lewer, 2001; Sutton, 1987). This literature has not theoretically defined the Closedown effect.

The Closedown effect has been observed in multiple cases as a productivity increase effect, where no capital investments are made. Investments are rare in closedown context and in the majority of reported cases no investments were made at least two years prior to the closedown decision. This enables comparability between periods before and after the closure announcement.

The type of measures that are of importance differs between organizations. For example and based on the empirical cases from this thesis, some organizations put an emphasis on quality levels whereas others focus production speed, resource utilization or output per time unit or per employee (e.g., ton/hour and ton/employee). Regardless of what type of measure that is being applied, management put an emphasis on practicing management and control focused on the prevalent measure(s) that are in focus (Jackson & Petersson, 1999).

As a closedown decision is announced, the A Holistic Approach to the Productivity Paradox argues that management control diminishes. Productivity measures are no longer a priority, or even abandoned. If this happens, it is necessary for case researchers to urge management to continue measurements throughout the closedown period (e.g., Bergman & Wigblad, 1999). Only by continuing to measure performance throughout the closedown period, as well as tracking employees leaving the organization, does it become possible to calculate and compare productivity development over time.
In all of this thesis’s cases, and the experience from previous research on closedowns, rather simple measures of productivity have been applied. Basically, simple output – input measures. For example, the Gusab Stainless case measure of productivity as tons per production hour per employee. (cf. *When the Lights Go Out* paper).

Regardless of actual productivity measures, it is possible to compare different cases by considering relative changes in productivity in the periods before and after the closure announcement. Thus the statistical significance of the closedown effect across many cases was measured in the *Pyrrhic Victories – Anticipating the Closedown effect* paper. This testica determines the significance of the strength in the Closedown effect, testing the degree of parallelism between both periods.

In summary, the Closedown effect does not necessarily represent one single productivity measure, applied for all cases. Rather, dependent of what type of productivity measure that has been applied in practice. A primary reason to this is the fact that researchers do not always have full access to critical data for calculating alternative measures. This might be seen as a deficiency but it is argued that the applied productivity measures hold a strong external validity.
3 Research design and methodological considerations

The four papers each had their own specific research design and methodological considerations due to the explorative character of this thesis: the first paper is a theoretical recontextualization; the two following papers focus on empirical studies; and, the fourth paper is a theoretical contribution. This chapter therefore considers both the general research approach as well as describes research design and methodological considerations of each of the papers. I also elaborate on the comparability of the different papers.

For that reason a description of the research design and some methodological considerations regarding the specific papers as well as considerations and assumptions that are made on a more general level, the considerations that are relevant for all the papers are given here. In this thesis and in particular this chapter, I also elaborate on the comparability of the different papers. In chapters 4 and 4.1, I outline how the analysis of the papers as well as how the emergent and tentative pattern of explanations to the Closedown effect is developed. However, this chapter begins with a reflection on the explorative research journey.

3.1 My explorative research journey

This research journey began with an interest of exploring the downside of business and decline phases. One reason to this interest was a counter positioning to the oft-applied focus and the mainstream literature in business research on growth and surviving organizations. Taking this path led me further to the research field of decline and downsizing and in particular closedowns.

When starting an explorative journey there might be a need for a researcher to open up for possible streams of theory, research designs, methodological approaches and empirical settings and findings in order not to close or exclude possible paths of the exploration. For that reason I applied a broad search pattern for both literature and empirical settings, in order to be able to identify possible methodological approaches.
Departing on the explorative research journey brought me to the first stop; encountering the literature. Following Whetten’s (1980) claim that research on decline has been a neglected topic in organizational science, even if research on both decline and downsizing has grown significantly over the years (cf. Mellahi & Wilkinson, 2004). Maybe consequently, from the literature review a fragmented picture evolved. A variety of theoretical conceptions, theoretical and analytical frameworks were identified. Taking the literature review further with research on closedown and in particular research on single-plant closures, strengthened my apprehension of a fragmented, scattered and multi-faceted field.

Following the literature review, some preliminary adjunctions had to be made. Encountering a fragmented field of research, naturally lead me to put some attention to the positioning toward the theory of science. In this thesis, this is done through the application of a theoretical base, referred, in previous research decline and downsizing as well as the limited set of closedown studies. Through the literature review and analysis it was evident that there were consistencies in-between the scientific foundations of the theoretical starting points. This is why the positioning within the theory of science is made through this analysis and the development of the theoretical framework within the specific papers, the research design as well as the applied methodologies.

Extending the literature review provided me with evidence that research on closedowns was an even less developed topic in organizational science compared to decline and downsizing. I came across a few studies that reported a somewhat paradoxical or counter-intuitive phenomenon that occurred during the process of closedown. Closedowns seemed to generate increased productivity, performance, efforts, and higher commitment. The Bergman and Wigblad (1999) study addressed this phenomenon and labeled it the *Closedown effect*, and similar, but still only in a footnote, Sutton (1987) noted that the productivity seemed to increase during the closedown process.

These studies became a starting point for the development of my field of research. Still, I had a problem to handle, where to establish the theoretical base as this and the few other studies were limited in the sense that they did not specifically provide theoretical conceptions and frameworks for analysis. For these reason it became necessary for me to conduct a theoretical journey in order to explore the field and in order to develop a theoretical foundation from which the subsequent studies were conducted.
The arguments by Bergman and Wigblad (1999) pointed to some explanations to the Closedown effect such as; it was human driven under a situation of a closedown decision causing a threat of job loss and under a situation where no capital investments were made. A parallel to this was possible to make to the classical Hawthorne experiments and the well-known Hawthorne effect (cf. Gillespie, 1991; Mayo, 1933; Roethlisberger & Dickson, 1939). In the literature it is argued that both the Closedown and Hawthorne effects are human driven productivity increase effects (e.g., Bergman & Wigblad, 1999; Gillespie, 1991; Mayo, 1933).

The Hawthorne experiments have served as a paradigmatic foundation for the study of work within the social sciences and the fact that the experiments have been constantly reconsidered in the light of contemporary disciplinary debates and earlier conclusions have been questioned (Gillespie, 1991: 4). It was evident from the experiments and the arguments of Gillespie (1991) that under a situation of an underlying threat of ending the experiments, no capital investments and continuous change of working conditions, the productivity increased throughout the entire experiments and defined test-periods. However, could it be possible to explain the appearance of the Closedown effect through the explanations given to the Hawthorne effect? This became the very foundation of the first paper of this thesis, a paper with an extended purpose for my research agenda, to serve as a theoretical positioning in my field of research.

An elaboration on and theoretical analysis of the Closedown, Horndal and Hawthorne effects provided some initial explanations to factors that drives the productivity. Applying a decline perspective provided a foundation for analysis and conclusive arguments on factors such as: the context, the appearance of threat, degree of capital investments, rationalizations, degree of management control, development of informal leadership and informal work-groups, degree of operative space for individuals, degree of motivation and payment incentives.

From the theoretical positioning a natural step in order to gain new knowledge was to enter the empirical field and to conduct an in-depth case study. Following Sutton (1987) claim that little is known about how a closedown process unfolds, I carried out an in-depth empirical case study through the empirical work at Gusab Stainless. The choice of conducting a case study research was founded in the explorative ambition of this thesis.
Case study research can provide in-depth knowledge and an opportunity for the researcher to generate a broader understanding of a complex phenomenon (e.g., Merriam, 1994; Eisenhardt, 1989). A survey would have been a valid alternative. Still, without a theoretical positioning and an in-depth knowledge, lack of empirical evidence and the fact of a fragmented, scattered and multi-faceted field of research made the choice of case studies natural for this thesis.

Entering this field of research provided a unique set of conditions to accessing different types of information, from classified documents and reports, via production statistics and full access to the plant for observation and interviews with the workers. Access became a crucial variable for this case study. I was granted full access both in time (e.g., for interviews and being able to ‘live with the organization’ during the closedown process and to documents. I was not excluded from any type of information that was needed or sought.

Tracking the productivity development and matching it to critical events that took place during the closedown process provided a foundation for the interviews with both the management and the workers. One part of the interviews was focused on asking the respondents to comment these critical events and express their thoughts on both the appearance of threat as well as possible explanations why the productivity increased. The production statistics in this case was descriptive statistics on the productivity development and the locally applied measures of productivity were used for analysis. The other parts of the interviews covered factors and aspects derived from both the theoretical positioning as well as from previous research on closedowns.

The possibility of analytical generalization from a single-case study is highly limited due to the case-specific in-depth information, why it became necessary to expand the empirical investigation to a broader setting (cf. Yin, 1992).

Continuing the journey of exploration led me to a path of expansion of the empirical domain, i.e. a search for more general knowledge about the phenomena. For that reason it became a natural step to expand this explorative approach to cover not only single cases but also multiple cases. This provided an opportunity to compare the studies and analyzing the analytical generalizibility of the Closedown effect.
Encountering four different cases, similar to the extent that they were characterized by conflicts between management and the workers and a non-socially responsible (Non-SR) management approach to the closedown process, provided a base for a comparative study. Analyzing previous research, no categorization of the closedown cases were made, why it became necessary to identify variables for classification dependent of the managerial setting and time-frame under which the organization was closed down.

Essential in this comparative study was the productivity statistics for each case that were analyzed, especially as the dependent variable of this study is productivity (productivity development). Previous research had been limited in the sense that it did not statistically test the strength of the Closedown effect, rather being descriptive. The statistical analysis provided a base for analytically generalizing the appearance of the Closedown effect. Naturally, using only four cases limits the possibility to analytically generalize the results, rather providing an indication of the appearance of the Closedown effect, even in Non-SR settings.

Further the previous research did not take into consideration different phases of the closedown process as well as managerial setting and time-frame. In the exploration it therefore became natural (and necessary) to create a structure for the analysis and classification of closedown cases, why a categorization scheme was developed.

Up to this point, previous research had primarily focused on single cause and effect explanations to the puzzling phenomenon of the Closedown effect (Bergman & Wigblad, 1999) and yet no effort had been made to try to generate a better understanding of this phenomenon. For that reason the explorative journey continued, moving in the direction of testing a holistic approach to analyze the Closedown effect, as an alternative to mainstream explanations, based on single cause-effect relations. Developing a dynamic and holistic model primarily based on the Buckley (1967) model of collective action and institutional structures, an analysis was made and a previously reported closedown case was tested. In order to be able to do so, a determination of the model was made, taking into account extrinsic variables effects on the closedown process and therefore opening up for handling the dialectics between the organization and the extrinsic variables.
In the first four papers of this thesis attention has been given to theoretically position the research on closedowns relatively to the vein of research related to decline and downsizing. From this point of the exploratory journey, the theoretical contradiction between research on closedowns and downsizing has not been fully explored. It was a contradiction in the sense that what can be regarded as two closely-related research fields indicates contradictory results.

In short, research on downsizing has in many cases indicated decreased efforts, declining (or no significant positive effect) productivity and decreased adaptability (e.g., Brockner, et al., 1988, 1987, 1986, Greenhalgh & Rosenblatt, 1984, Littler, et al., 2004; 2003a, b, 1994a, b). On the contrary and as previously noted, some closedown studies have shown other outcomes such as evolvement of increased productivity, self-organizing work-groups, increased efforts, decreased job rotation and evolvement of innovative skills and day-to-day rationalizations (Brown, Schmitt & Schonberger, 2004; Bergman & Wigblad, 1999; Bergman, 1995; Lewer, 2001; Sutton, 1987; Weber & Taylor, 1963; Wigblad, 1998, 1995). For these reasons the exploration after the four papers moved into the direction of a theoretical elaboration and development of the demarcations and definitions of research on closedowns and downsizing.

The first paper in this thesis, the Recontextualizing the Hawthorne effect paper, is a theoretical review and positioning. Following after the empirical studies I returned to facing the situation of and the need for defining research on closedowns in relation to downsizing literature. The reason for doing so is that the majority of the papers in this thesis draw upon the existing downsizing literature, as and adjacent field of research as well as the fact of a limited literature on closedowns. An example, in several aspects explanatory variables to changed efforts and performance from the downsizing literature has served as a foundation for pointing the search light in certain directions plausible relevant for developing a tentative pattern of explanations to the Closedown effect.

As four papers has been the outcome, or in other words – the consequence, of the explorative journey there were still some lose ends to tie up. Coming back to the overall research question of this thesis (See Research questions and purposes) the explorative journey took a turn towards analyzing the outcomes of the papers, and the extracted explanations to the common denominator of the Closedown effect, that was dismantled and later put together in themes and aggregated dimension (See chapter 4).
This journey has up to this stage provided a various set of data, procedures as well as ways of interpreting and analyzing the data. The combination of approaches is momentous to this thesis. Entering a somewhat novel and unexplored field of research makes it natural to apply different methods. It should be noted that the different methodological approaches has been applied for the different purposes regarding the focus of each paper of this thesis. This becomes essential for an explorative approach in order to make it truly explorative. Still, applying an explorative approach is not the same as being unsystematic.

A systematic approach is of importance when developing a pattern of explanations to the Closedown effect and analyzing the papers. Inspiration has been derived from the works of Corley and Gioia (2004), Van Maanen (1979) and Strauss and Corbin (1990), among others (See chapter 4.1). By first identifying the dominant explanatory factors to the Closedown effect and then aggregating them into concepts and themes from which the tentative pattern of explanations is developed I generate a structured and systematic approach (See chapter 4.1).

I stress that this thesis should be considered as a point of departure and not the final destination of an explorative journey and for that reason I outline some propositions to future research. (See chapter 6). More specific adjunctions are specified in each one of the papers in this thesis. Below is a table that outlines the sequence of the papers and an overview of their content (See chapter 3.1.1). This is followed by a chapter (3.1.2) on a critical reflection on the explorative approach.
### 3.1.1 Sequence of the papers and an overview of their content

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<tr>
<td><strong>Basic subject matter</strong></td>
<td>Recontextualization of both Mayo (1933) and Roethlisberger &amp; Dickson’s (1939) studies at Hawthorne in order to develop a theoretical foundation for studying organizational closedowns.</td>
<td>In-depth and fine tuned analysis of a single-plant closure and development of a theoretical model</td>
<td>Comparative analysis of four closedown cases with non-SR managerial setting.</td>
<td>Theoretical elaboration, from a holistic perspective, on the results of previous reported closedown cases.</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>To explore and specify a theoretical base from which organizational closedowns can be analyzed</td>
<td>To explore the impact of an applied SR management approach, and how the dialectics between management and the workers affects the productivity development.</td>
<td>To extend the exploration of organizational closedowns and its empirical domain by encounter multiple-cases in different managerial settings.</td>
<td>To propose and test a holistic approach to analyzing the Closedown effect, as an alternative to the mainstream explanations which are based on analyzing single cause-effect relations</td>
</tr>
<tr>
<td><strong>Research design</strong></td>
<td>Theoretical recontextualization and comparative analysis of the classical Hawthorne studies, from a closedown perspective</td>
<td>Single case study Fine-tuned process based analysis of critical events. Semi-structured interviews Observations Field notes</td>
<td>Multiple case studies and comparative analysis Semi-structured interviews Observations Field notes</td>
<td>Single case study Semi-structured interviews and re-visititation of a previously reported closedown case Observations Field notes</td>
</tr>
<tr>
<td><strong>Analyzed empirical case/s</strong></td>
<td>Not applicable</td>
<td>Gusab Stainless</td>
<td>Gislaved Tire Manufacturing Gislaved Studding Fundia Steel Wire Rod Cabinet Factory</td>
<td>Fundia Steel Wire Rod</td>
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<tr>
<td>Main results</td>
<td>Threat, whether or not it is expressed in a decision, is the one explanatory factor linking the three identified effects on productivity. The similarities between the three productivity increase effects are found in the presence of threat, the lack of capital investment, minor rationalizations only, the development of informal leadership and informal groups. When moderate allowance for operative space, informal groups will emerge and will enhance productivity, and when this scope is extended into operations management, informal leadership will evolve, accompanied by yet further increases in productivity.</td>
<td>Two primary productivity-enhancing effects are identified and supported in the literature; the human driving and the technical driving effects. The level of conflicts and speed of conflict resolution co-varies with the workers confidence (or trust) in management. Management control diminishes over time, providing operative space for the workers. With increased operative space, workers tend to initiate changes in work-design and conduct day-to-day rationalizations and develop innovative skills with enhanced employee motivation. With informal leadership comes spontaneous organizing within and among informal groups and enhanced employee motivation due to the newly achieved operative space and decreased levels of formalization. Individualization grows stronger throughout the closedown process and incitements for employee motivation changes. Workers perception of threat of job loss holds a certain explanatory value to the Closedown effect.</td>
<td>The Closedown effect can be anticipated during the countdown period, but not during the advance notice period. Classification scheme for analyzing closedown cases. Distinguishing different phases during the closedown period. During the advance notice period (prior to the shutdown), productivity tends to decrease. During the countdown period, productivity tends to increase. Indicating a statistically significant Closedown effect in closedown cases with a non-social responsible management setting.</td>
<td>After the initial knock out of economic equilibrium in the beginning of the advance notice period, it is possible to identify a pattern of social dynamics - over time where a variety of factors come into play. The overall dominating pattern is that top management by the closedown decision has deprived themselves from their control possibilities. The main pattern in the new order is that management control is replaced by more “Self-management” on the plant level, and very strong psychological reactions based on the unfairness feeling. This pattern provides a better understanding concerning what clusters of variables are influencing the changes in productivity and the strong Closedown effect during the countdown period.</td>
</tr>
</tbody>
</table>
contributes to the literature on closedowns by advancing an understanding of an inter-relationship among productivity affecting variables. This model takes into account the dynamics that come into play during a closedown process by identifying critical aspects and extending both the empirical and theoretical domains of such research.

Table 5 Sequence of the papers and overview of their content
3.1.2 A critical reflection of the explorative approach

An explorative approach can have several benefits as a research approach and design when encountering a somewhat novel, limited and scattered field. It opens up for the application of different research designs and methodologies for different purposes, here outlining five lines of arguments:

*Firstly*, an explorative journey is often dependent of the researcher as an actor. Actor in the sense that the researcher is dependent of his or her ontological and epistemological apprehensions as well as views of methodology and the human nature (cf. Burrell & Morgan, 1979). That is, the research composition is likely to be affected by these basic assumptions. Dependent of the apprehensions of the researcher, certain aspects will be focused and taken into consideration such as the selection of theories, theoretical conceptions, empirical settings, analytical methods and type of results, whereas others are neglected. That is, if two independent researchers would face the same situation (or rather, opportunity), the structure of an exploration would most likely be somewhat different.

*Secondly*, in the case of this thesis, the intention is to have a of logic through the sequence of the different studies and presented papers; Moving from a theoretical positioning via an in-depth fine-tuned analysis, through an extension of the empirical domain and opening up for a holistic approach of understanding. The sequence of the papers is build upon the intention and ambition that they should generate a cumulative knowledge, as they build on each other, sequentially.

Focusing on the downside of business and in particular closedowns is argued to be a rather novel and unexplored field of research, tools such as theoretical conceptions and a framework had to be developed before entering the empirical domain. These tools where primarily based on previous research on decline, downsizing and closedowns, as there are adjacent findings that seemed likely and relevant to apply in closedown research. This is also a reason for why an iterative interplay has taken place, in the development of the working frameworks and the empirical evidence and the fact that the papers build upon each other, sequentially.
The sequential and cumulative development of knowledge in this thesis is based on the iterative approach. There can be some deficiencies related to this approach as there is a risk in limiting the use of certain core references and not taking into account new or alternative conceptions for explanations or better understanding. This can lead to the provision of myopic results and contributions, as more or less the same type of explanations or better understandings are sought. The ambition and intention has not been to only produce and reproduce the same types of, and confirming, results as previous research. Rather, adding contributions by incorporating both new and alternative conceptions. It is argued that the sequential and cumulative approach is valid and preferred, especially when encountering a rather novel and unexplored field of research. That is, each paper of this thesis adds additional knowledge on closedowns, and (metaphorically) adds pieces to the puzzle.

Thirdly, one could argue that another path could have been found in empirically based research designs and methodologies such as for example; Grounded Theory (e.g., Glaser & Strauss, 1967; Strauss & Corbin, 1990), ethnography (e.g., Alvesson & Sköldberg, 1994) or Action research (e.g., Argyris, 1985, 1990). Naturally, this could be a possible approach to this novel an unexplored field. These, among other approaches, could be relevant and beneficial to the knowledge development (See chapter 6). However, and since research has been done on other aspects of the downside of business, such as decline and downsizing, a conscious choice was made to try to build upon this previous research – still taking into account the assumption that closedowns follows a different logic than decline and downsizing. For these reasons, it is argued that the deliberately selected sequence and logic of this thesis holds its relevance.

Fourthly, the outcomes and results of the papers presented in this thesis can be considered somewhat disparate, as they include both functionalistic as well as to minor extent interpretative aspects and elements of closedowns. The papers of this thesis primarily seek knowledge with the ambition to provide hard-fact based descriptions of closedowns. For example, by repeatedly coming back to the performance measures of productivity and relate the productivity development in the closedown process to critical events or managerial settings it has been possible to generate descriptions that are functionalistic. These performance measures represent hard-fact measures that I as a researcher can not interfere with nor influence.
Another example of this is the relation in all of the papers to the theoretical framework and extensive literature review that has been conducted, in order to validate the results. Arguably, the vast majority of the references in the theoretical framework embody a functionalistic approach.

In terms of Burrell and Morgan’s (1979: 3ff) continuum it would however not be relevant to claim that the outcomes and results of this thesis are truly objective, as there are some interpretative elements in the papers. That is, applying a case study research method and having semi-structured data collection methodology, typically represented by the interviews, provides an extensive set of empirical data. Through a rich body of empirical data the researcher has to select certain aspects, and exclude other, in order to focus the description and analysis in relation to the specific purpose of, in this case, each paper.

In all the cases and throughout the data collection my primer interest has revolved around the closedown process in general and the productivity development in particular, and the selections of focal aspects have been dependent of the purpose of each paper, as well as the overall purposes of this thesis. This have generated a structure of this research in the way that data has been collected systematically (cf. Eisenhardt, 1989). The systematic data collection is presented in the different papers.

This explorative approach have there generated a span of conceptions and to some extent different types of results, or more precise results on different levels of analysis. That is, covering aspects such as management, individual and group levels, statistics on performance measures as well as practical implications.

By applying an explorative approach I cover and generate multiple aspects of the same phenomenon; the closedown process, with the ambition of providing a foundation for further research. It would be rather naive to put a claim on that this thesis is covering all aspects and saturating research in this specific field. Rather the aim is to outline a foundation and to establish a base for further research. And as previously noted; this is the point of departure and not the final destination of the explorative journey and for that reason I outline some propositions for further research. (See chapter 6).
Fifthly, case study research has its certain deficiencies, as with all methodologies. The abilities of generalizations, hen considering generalizations as being statistically generalizable, are limited from case studies; still it is argued that theory can be built on case study research (cf. Eisenhardt, 1989). Rather and as in this case, analytical generalizations can be made and it is argued that the encountered cases hold their validity of being typical closedown cases and therefore relevant to consider (cf. *A Holistic Approach to the Productivity Paradox* paper). The different cases represent a span of empirical setting such as taking into account different managerial settings, size of the organization and length of the closedown process (See chapter 3.4).

Central in this aspect is the role of the literature, why an extensive literature review has been conducted and applied in all the papers. This is done in order to relate and validate the results of each paper, to a larger body of related and adjacent literature. Arguably, the case study research method is relevant to apply when studying closedowns, as there is a limited set of researchable objects as well as the problem of gaining access. When entering a rather novel field of research it is relevant to apply an exploratory approach in conjunction with a case study research design.

When it comes to analyzing the outcomes of the papers and considering the different types of knowledge it must be acknowledged that there are some limitations to this. As noted, all but the *A Holistic Approach to the Productivity Paradox* paper hold an approach of exploring and explaining the Closedown effect (and closedowns). By having the approach of providing a better understanding the Closedown effect as in this paper it will become possible to identify and elaborate on, for example, institutional factors as influential to the appearance of the Closedown effect.

There are some principal problems of incorporating explanations and generate a better understanding – as they seek different types of knowledge (cf. Arbnor & Bjerke, 1994). Explanatory-based research has primarily the ambition of explaining cause and effect relationships, whereas an understanding-based research has primarily the ambition of generating or creating a better understanding in a holistic perspective. Arguably, since this thesis has the ambition of developing knowledge through an explorative approach and for that reason it becomes equally important as well as necessary to go from a theoretical positioning via an in-depth study, through a expansion of the empirical domain, to an holistic
understanding and theoretical (re)positioning (See chapter 3.1.1). In the discussion of the
results of this thesis each of the papers are positioned in correlation to the previous research on closedowns.

Regarding the theory building and theoretical contributions of this thesis; they can be seen as somewhat limited. By conducting the research that has been carried out throughout this thesis, additional light has been shed on an often neglected phenomenon in business research. The theoretical contributions should be seen as additional contributions to the limited body of research on single plant closures and the process of closedowns. By providing a tentative pattern of explanations as well as a list of explanatory factors to the closedown effect a contribution to the field is done (cf. Weick, 1995). This contribution can also serve as a foundation for future research on closedowns.

3.2 Searching for literature and information

An extensive literature review has been conducted for this thesis. Literature has been searched in various sources and the following databases are those of primary use for this search:

- LIBRIS (The national (Swedish) library data system)
- http://www.google.com/scholar
- Social Science Citation Index.

Most frequently used key words applied for the literature search has been (single searches and combination searches of the following primary key words):^{12}
The words within brackets refer to the searches made to the combinatory key words for my literature search. This search was also combined with a search method close to a ‘snowball’ search. Taking a starting point in the book “Readings on Organizational Decline” (Cameron, Sutton & Whetten, 1988) I was able to track other and some of the basic and core references, which where combined with a search in the Social Science Citation Index in order to broaden the theoretical foundation for this thesis, enabling to capture more recent research.

This ‘snowball’ approach was the starting point of the literature search, which later was expanded and extended to searches for more recent research on closedown, downsizing and decline. For that reason I have searched through indexes and proceedings of various conferences, such as the Academy of Management (AOM), British Academy of Management (BAM) and the European Academy of Management (EURAM) conferences, in order to get hold of more recent studies. However, even in the conference proceedings there was a limited set of studies on closedowns. Recently, a special track was initiated, at an AOM conference, on plant closure and closedowns. Evidently from the papers of this track is that the vast majority drew upon the existing downsizing literature and only to a limited extent on the closedown literature. None of these studies focused on productivity.

When encountering a vast body of literature it becomes essential to have a strategy on sorting and qualifying the papers for analysis, especially when the field is scattered and multi-
facetted, focusing on various types of outcomes. The key variable in the selection and sorting of the literature is performance (and what affects performance). That is, a study that qualifies for the analysis must focus and contain measures of performance outcomes or factors that explain what affect performance. When it comes to neighboring research areas such as decline and downsizing, it is however not possible to capture all the literature, why a deliberate focus has been on conducting an analysis of primarily high impact studies. That is, tracking those studies that have been most commonly referred and in combination with more recent studies reported in conference proceedings and books. It should be noted that the majority of the literature that is qualified for review and analysis is primarily peer reviewed articles/papers.

The literature on closedown was collected over the period 2002-2007 covering the years 1980-2006. Comprehensive searches in multiple databases as well as in working-papers and conference proceedings generate a critical mass of literature enabling this review and analysis. Comprehensiveness is achieved through cross checking references through, for example the Social Science Citation Index (SSCI) and searches in proceedings from conference papers, in order to secure comprehensiveness. Non-published items in the Internet were not included. All references were abstracted or full copies obtained and subject to thematic analysis.
3.3 **A note on the comparability among the papers**

In this section some arguments are outlined, taking into consideration some critical aspects, on how and why the papers can be compared to one another and on the foundation on which the empirical cases rest upon. Detailed descriptions of the applied theories, methodological considerations and empirical cases can be found in the separate papers:

*First*, a central aspect to case study research is the matter of access. In all the encountered cases access has been granted providing opportunities to act freely and with few restrictions in access to material. Access in time, material (e.g., documents, minutes from meetings, reports and production statistics), respondents and presence for the researcher has not been delimited by any means and did not delimit my opportunity to act freely nor restricted. Being able to act freely has enabled, with extensive opportunities to collect data and information, in-depth studies of closedown processes.

*Second*, selection of empirical cases is an important aspect when building theory from case studies. There are two basic principals of sampling, probability and non-probability sampling (e.g., Merriam, 1994: 60ff). In case studies non-probability sampling is the foremost applied method. While cases may be chosen randomly, random selection is neither necessary nor even preferable (Merriam, 1994: 62ff). However, the sampling of cases from the chosen population is unusual when building theory from case studies. Such research relies on theoretical sampling (i.e. cases are chosen for primarily analytical and not statistical reasons) (Eisenhardt, 1989).

For these reasons several cases are identified and studied and serves as a foundation for the empirical work within the separate papers of this thesis. It is cumbersome to receive randomized samples of closedowns, why I have applied theoretical, purposive and judgmental samples of the encountered cases. It should also be noted that similar sampling techniques have been applied for all encountered cases.

*Third*, three of the papers are primarily based on empirical cases, based on a case study method, whereas the fourth paper holds a critical analytical review approach. In all the empirical cases similar data collection methods, including semi-structured interviews,
observations, field-notes and various types of reports and documents have been applied. That is, the application of data collection methods is similar in all the cases referred in the different papers. These methods have served as a base to analyze, in order to explore and explain the productivity development during the closedown period, as well as capturing workers, labor union and management’s apprehensions and experiences of the closedown process.

*Fourth*, interviews have been complemented by participatory observations, field-notes as well as various types of documents (*e.g.*, internal reports, memos and minutes from meetings). These documents have been photo copies and have come to add additional information to the different cases. Field notes and notes from the participatory observations has been transcribed and have add additional information to the cases as well as capturing informal discussions primarily among the workers in informal settings (*e.g.*, around the coffee table).

*Fifth*, similar types of respondents have been focused in the case studies. That is, blue-collar workers, management and labor union representatives are primarily the respondents that are being encountered in the interviews. All interviews has been tape-recorded and transcribed and have been sent to all respondents for validation and opportunities of correction and amendments or withdrawal of statements. In few cases corrections where made by the respondents, primarily by respondents with management positions. The type of corrections that were most frequent was corrections of facts regarding production technique and products. On few occasions did blue-collar works conduct corrections, primarily related to expressions of the experience conflict context (*i.e.* worker – management relations).

In order to generate a methodological fit for the conducted research I have a departure in a recent paper by Edmondson and McManus (2007) in order to wrap up the discussion on the denominators of and comparability between the separate papers as well as this thesis. Research on closedowns can be seen as being on a nascent state as prior theory and research, have attracted little research or formal theorizing to date. The applied methods in the papers and the thesis are relevant in order to generate a better understanding of how a process unfolds, developing insight about a novel phenomenon, digging into a paradox and explaining the occurrence of a surprising event. As argued, interests in these problems arise from unexpected findings in the field, and from addressing gaps in existing theory.
Because little is known, rich, detailed, and evocative data have been needed to shed light on the Closedown effect. Interviews, observations, open-ended questions, and longitudinal investigations and hybrids of qualitative and quantitative data are applied methods for learning with an open mind.

Further, content analyses have helped to reveal themes and issues that recur and need further exploration (See chapter 4.1). Through this and to some extent implying an iterative process, theoretical categories emerge from evidence (and the literature) and shape further data collection. This has primarily evolved sequentially through the exploration of the Closedown effect, reported through the papers and this thesis (See chapter 3.1.1).

The goal of the data analysis is to generate a pattern of explanations. The data analysis rests upon the separate papers as well as the literature in order to develop a thematic content, coding the information for evidence of the construct, as outlined in this chapter.

It is argued that comparability between the different papers, dependent of the data collection methods rests on the assumption that similar types of data has been collected, with similar types of respondents. That is, the application of the outline data collection methods has searched for the same type of knowledge. Interpretative elements can be identified, consequently following the case study research approach. Hence the dominant view among the papers holds a functionalistic approach (Burrell & Morgan, 1979). Further, it is argued that the methodological considerations are not in glaring contrast to one another, rather complimentary and for that reason comparable.

Now turning to a discussion on the comparability between the empirical cases that are referred in the different papers and outlining a set of arguments. Detailed descriptions of the specific context and case characteristics can be found in the separate papers in which the case is referred.

*Firstly,* all the encountered cases are within manufacturing industries. There are some differences in the type of products that have been produced within the different organizations. Referred cases in the literature as well as the cases reported in this thesis show a substantial variety and range of organizations from pulp and steel as capital intensive process production to glass, steel wires, doors and tires that are more labor intensive. The pay systems used a
range from monthly pay systems based on different parameters (e.g., age, skills, years employed, etc.) to piece rate systems (cf. Wigblad et al., 2007). Nevertheless, all cases were characterized by having some degree of automatization and being dependent of technical solutions (e.g., machines) for producing its products.

The encountered cases where geographically located in local company-towns. These company-towns are often characterized by a relatively small labor market and inhabitants are often reluctant to commute or move to other locations. The level of unemployment, for the regions where the closing units were located, was relatively moderate. The industrial structure was often characterized by few manufacturing companies and some distance to other industrial regions. This is a part of the contextual setting for each of the cases and further elaborated on in the different papers.

Secondly, the closedown process differs between the cases regarding the length of the advanced notice period and the countdown period. The length of each period was dependent of the local conditions and relations between management and the workers, as well as the conflict context. Still, comparisons are made on the productivity between the period prior to and the period post the closure announcement, as outlined in the Pyrrhic Victories – Anticipating the Closedown effect paper. By encountering a variety in the length of the closedown processes and identifying the appearance of the Closedown effect, independent of the length of the closedown process, enables a validation of the Closedown effect to different time frames for closure.

Thirdly, the managerial settings differ between the cases. For that reason an analytical distinction is made in the Pyrrhic Victories – Anticipating the Closedown effect paper, taking into account socially and non-socially responsible setting. A distinction is also made for cases where management has provided a strategic non-socially responsible but yet a tactic socially responsible setting. By encountering a variety of managerial settings in the closedown cases and identifying the appearance of the Closedown effect, independent of the setting, enables a validation of the Closedown effect to different managerial contexts.

Comparability among the empirical cases rests on the assumption that they are analytically typical closedown cases, and representative for a larger frame of closedowns. Despite the fact that the majority of reported closedown cases are Scandinavian cases, similar outcomes – with
increased productivity has been reported in non-Scandinavian cases as well. Examples here are some cases are the cases in the USA reported by Brown, Schmitt & Schonberger, (2004) and Sutton, (1987), and a case in Australia reported separately by Lewer, (2001) and Littler (1999). Notably is the fact that the US cases are not only delimited to manufacturing industries, but also include, for example, administrative functions/departments, a store and a hospital (Sutton, 1987). The US cases are characterized by relatively short closedown periods, from a few weeks to no more than six months. For that reason it should be argued that the ability of comparison between cases is to some extent limited.

The reported closedown cases in this thesis represent analytical typicality, of the cases, dependent of their contextual setting in which they appear. That is and as outlined in the vignette to this thesis, corporations that conduct restructuring activities, including both downsizing and closedowns of different facilities. In some cases this constitutes closedown of a, for example, production unit.
Below, and based on the arguments above, I summarize some of the data for the empirical cases that are referred in this thesis:

<table>
<thead>
<tr>
<th>Company name</th>
<th>Industry and type of products</th>
<th>Number of employees</th>
<th>Duration of Closedown process</th>
<th>Managerial Setting</th>
<th>Number of interviews</th>
<th>Length of interviews</th>
<th>Referred in paper:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gusab Stainless (Gusab)</td>
<td>Manufacturing Wires</td>
<td>104 (87 blue collar, 17 white collar)</td>
<td>Advance Notice Period (ANP) = 2 months Count down Period (CDP) = 16 months</td>
<td>Socially responsible (SR)</td>
<td>47</td>
<td>30 min – 1,5 hours</td>
<td>When the Lights Go Out</td>
</tr>
<tr>
<td>Fundia Steel Wire Rod(*)</td>
<td>Manufacturing Wire Rods</td>
<td>33 (33 blue collar)</td>
<td>ANP = 3 months CDP = 4 months</td>
<td>Strategic Non-SR and Tactic SR</td>
<td>14</td>
<td>30 min – 2 hours</td>
<td>Pyrrhic Victories – Anticipating the Closedown effect and A Holistic Approach to the Productivity Paradox</td>
</tr>
<tr>
<td>Gislaved Tire Manufacturing</td>
<td>Manufacturing Tires</td>
<td>656 (538 blue collar, 118 white collar)</td>
<td>ANP = 2 months CDP = 4 months</td>
<td>Non-SR</td>
<td>10</td>
<td>30 min – 2 hours</td>
<td>Pyrrhic Victories – Anticipating the Closedown effect</td>
</tr>
<tr>
<td>Gislaved Studding</td>
<td>Manufacturing Studded tires</td>
<td>656 (538 blue collar, 118 white collar)</td>
<td>ANP = 2 months CDP = 16 months</td>
<td>Non-SR</td>
<td>43</td>
<td>30 min – 2 hours</td>
<td>Pyrrhic Victories – Anticipating the Closedown effect</td>
</tr>
<tr>
<td>Cabinet Factory(*)</td>
<td>Manufacturing Doors</td>
<td>120 (97 blue collar, 23 white collar)</td>
<td>ANP = 7.5 months CDP = 1 month</td>
<td>Non-SR</td>
<td>24</td>
<td>30 min – 2 hours</td>
<td>Pyrrhic Victories – Anticipating the Closedown effect</td>
</tr>
</tbody>
</table>

Table 7 Referred empirical cases in the thesis

(*) The Fundia Steel Wire Rod and Cabinet Factory empirical cases have been developed primarily by Rune Wigblad. However, comparability between these cases rests on the assumption that we, together, acting as a research-team, have collected and searched for similar types of information and data.
3.4 The trustworthiness of the research

Following Lincoln and Guba (1985) arguing that; the main issue in (qualitative) research when evaluating research is the trustworthiness. This evaluation can only be made by each individual reader. Still, different readers will perceive the study differently. The author will naturally play an important role in providing sufficient amount of information about the research process.

Lincoln and Guba (1985) propose four criteria:

- Credibility
- Transferability
- Dependability
- Confirmability

3.4.1 Credibility

*Credibility* is highlighted as a critical aspect in order to obtain trustworthiness and is divided into seven activities: Prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy and member checks. These criteria are discussed below with regard to the present study:

*Prolonged engagement* relates to spending an adequate amount of time in the empirical setting in order for the researcher to gain sufficient understating of the context to the phenomenon in focus. In my case, and taking the *When the Lights Go Out* paper as an example:

*Almost one month was spend in the company before the formal interviews began, in order to get a better understanding of processes and activities conducted by the workers. Initial interviews was conducted with randomly selected blue-collar workers from different working groups, before the formal interviews took place, in order to generate an orientation and deepened understanding of the type of work that was*
This approach, of spending time even before the interviews begun, was done in order to
develop a basic understanding of the specific context and day-to-day activities and
procedures. Not only in the Gusab case, as referred in the *When the Lights Go Out* paper, has
this approach been applied. In the Gislaved Tire Manufacturing and Studding cases, time was
spent at the site for the closedown before the formal interviews began. Time was also spent on
studying secondary information regarding the industries that these organizations operated
within together with extensive literature studies.

It is a risk of spending too much time in order to develop a basic understanding of the specific
context, as I as a research can come too close to the respondents, why I remained passive and
to some extent distanced throughout my observations and data collection. Naturally, by being
present and representing a role as a researcher, collecting data and information there is a risk
that I affect the respondents negatively. That is, the respondent might have a lack of
confidence in me as a researcher and therefore limit and restrict information. However, by
developing a (professional) relationship to the respondents I was able to access information
and it is my firm belief that all the respondents spoke freely about the prevalent situation in
the closedown process. For that reason it is argued that the professional relationship to the
respondents was important and even crucial in order to get hold of their stories, thoughts and
reflections.

Persistent observation is related to providing sufficient depth and support the research in
identifying the most relevant aspects to the phenomenon approached. In this thesis,
productivity development during the process of closedown was soon identified as the
dependent variable and focus, when approaching the phenomenon. The identification of the
productivity development was highlighted through the interviews and observations and in
other sources of data. Since productivity development became the dependent variable of this
thesis, literature has also been searched in the light of this, identifying and linking conceptions
and explanations from similar and adjacent fields (e.g., literature on decline and downsizing).

Triangulation usually refers to the cross-checking of data in order to secure a true picture
(Lincoln & Guba, 1985). It can however be argued that a more important aspect of
triangulation, in terms of the use of multiple sources, is to reveal new aspects previously unknown to the researcher. This aspect has been a central aspect in my study. The use of different sources of data was primarily undertaken in order to secure a true picture. The cross-checking of data, considering and taking into account a multitude of different sources of data and data collection methods (e.g., interviews, participatory observations, document studies, literature studies) was done in order to secure the logical coherence. For that reason, my intention has been to outline a structure that can be analyzed in a way that brings clarity to the theoretical concepts and permits the outline of a pattern of explanations.

Peer debriefing relates to exposing the researcher and the research process to a disinterested peer in a manner paralleling an analytical session and for the purpose of exploring aspects of the inquiry that might only be limited to the inquirer’s mind (Lincoln & Guba, 1985: 308). In this thesis formally appointed peers have been used, through different reviewing processes. All papers in this thesis has gone through at least one peer review, through the submission of the paper’s to peer reviewed journals as well as research conferences, workshops and seminars (See chapter 3.1.1). My research has therefore been continuously commented by a number of (independent and often anonymous) persons from different fields of interest.

Negative case analysis relates to the process of revising hypotheses with hindsight (Lincoln & Guba, 1985: 309). Negative case analysis has to some extent been applied in this thesis. In the Pyrrhic Victories – Anticipating the Closedown effect paper we try to falsify the appearance of the Closedown effect by encountering a non-socially responsible managerial setting, contrary to other encountered cases as reported in the other papers (e.g., When the Lights Go Out paper)

Referential adequacy means keeping some of the data crude, so conclusions can later be tested again. This was not done in this study for the main reason that crude data is difficult to distinguish from analyzed data. It is argued that throughout the data collection data is being processed and preliminary analyzed in the researcher’s mind. This is the foundation for why it is argued that it is hard to distinguish between crude and objective data. Some data has been excluded and some included in the final version of each paper. Still it is a cumbersome task for a case researcher to single out pieces of information, being representative and not obscuring the reader’s understanding. It should also be noted that not all data provided in the
papers is being used in the analysis and conclusions of this thesis. Rather, the data presented in chapter 4, serves as a foundation for the development of the pattern of explanations.

*Member checks* refer to providing the opportunity for the informants to check data. Throughout the empirical studies, all interviews have been tape recorded, transcribed and send them back to the respondents for their validation and opportunity of completion of eventually missing facts and if needed corrections of testimonies.

This was not done primarily in order to secure the facts but more in order to ensure that the respondent’s perspective of the closedown situation was captured. The possibility for the informants to read the material was also important to secure good relationships with the information so that no sensitive information from their perspectives was being published. The comments from the respondents did not result in any major rewriting of the case descriptions and did not affect the overall picture for all specific cases.

Further, in the paper *Recontextualizing the Hawthorne effect* attention has been given to how literature was searched as well as how the literature was handled and selected (See chapter 3.2). Regarding the productivity measures that have been in this thesis, they are foremost based on the production and productivity measurements that were carried out at the local plant for each case. On the production statistics that were collected, statistical methods were applied by the researcher. These methods are specified in the papers that analyze productivity statistics.

### 3.4.2 Transferability

*Transferability* refers to the provisioning of thick descriptions necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility (Lincoln & Guba, 1985: 316). This is related to the extent to which findings, generated from a (single) case study, can be transferred to other contexts (Eisenhardt, 1989; Hultén, 2002: 237f). I believe that I have generated such thick descriptions and it is argued that the concepts brought forward can be applied in similar settings of closedowns. A limitation in my case is the fact that all the empirical cases are found within manufacturing industries, where there is often a worker collective present. In, for example,
service industries and administrative functions such worker collective is not always as strong and prevalent as in manufacturing industries, why it is here argued that there is a need for further studies on other empirical settings regarding closedowns, than the one analyzed within this thesis.

### 3.4.3 Dependability

*Dependability* relates to examining the process of the inquiry (Lincoln & Guba, 1985: 318). This can be seen as related to the decisions made in relation to the inquiry, possible methodological shifts, whether the inquirer has been co-opted, and the extent to which practical matters have influence the inquiry excessively (Holmen, 2001: 347; Hultén, 2002: 238). The research process is outlined in chapter 3.1, where I explain some of the methodological considerations and challenges that I was confronted with and how these have been handled. Concerns related to the data collection are dealt with in chapters: 3.3 and 3.2 Searching for literature and information. By outlining these considerations at a fairly detailed level it is my hope that I have proved enough information for the reader to be able to get a sense of the nature of the research process underlying this thesis. It is my apprehension that with regard to dependability in the process a researcher must be dependent on multiple things such as informants, concepts and on the research context. The issue is not to try to be independent, but to understand how the dependence affects the study undertaken.

### 3.4.4 Confirmability

*Confirmability* relates to assessing the product of the inquiry and to what extent concepts used, the findings, and the data are consistent. I hope that the analysis in chapter 4 show that the pattern of explanations proposed matched in a way that makes the findings presented in the papers trustworthy. It is a main concern to arrive at an appropriate match between reality and theoretical constructs (Hultén, 2002: 239). In this study, an iterative approach has been applied in the papers dealing with empirical evidence from field studies. As noted in the *When the Lights Go Out* paper:
I began the research by developing a rough analytical framework based on case studies of where the closedown effect has been identified (e.g., Wigblad, 1998, Sutton, 1987; Bergman & Wigblad, 1999). This was broadened with a review of existing literature. I traveled back and forth iteratively, between the empirical narration and the analysis throughout the data gathering, in order to provide the possibility to generate and focus questions for the interviews and relate them to the working framework. This together with the materials received from the company served as the foundation of the data collection.

This description is typical for the approach that has been applied for all the case studies presented in the papers. This process successively have improved and clarified the focus of my studies, to some extent stretching and altering the boundaries of the framework and scope of the empirical data collection. This process has also helped to generate parsimony in these studies. In case studies, theory generation and confirmation are inseparable (Hultén, 2002: 240). It is therefore important to provide the reader with information so he or she can evaluate the research procedure and its outcome. In line with this, I hope that this section, together with the rest of the thesis has provided enough information to claim the trustworthiness of this study and its findings.

3.5 My contribution and work effort in this thesis

In this section a presentation of my contribution and work effort to this thesis is provided, as some of the papers are co-authored. Magnus Hansson has been involved in the entire production of this thesis and has authored and co-authored all of the parts. Magnus Hansson has solely authored thesis, including introduction, research questions and purposes, methodological consideration, literature reviews, results, practical implications and propositions for future research.
3.5.1 Recontextualizing the Hawthorne effect

In the paper, *Recontextualizing the Hawthorne effect*, Magnus Hansson and Rune Wigblad have co-authored the introductory and conclusive chapters, whereas Magnus Hansson has written the methodological, theoretical, empirical and the analytical parts.

3.5.2 When the Lights Go Out

In the paper, *When the Lights Go Out*, Magnus Hansson is the single author and has provided the entire manuscript and collecting all empirical data.

3.5.3 Pyrrhic Victories – Anticipating the Closedown effect

In the paper, *Pyrrhic Victories – Anticipating the Closedown effect*, Magnus Hansson and Rune Wigblad have co-authored the introductory chapter, the analysis and conclusions. Magnus Hansson has contributed by writing the conceptual framework and reporting the case studies on Continental Gislaved Tire Plant (the Tire manufacturing case and the Studding case). Magnus Hansson has also conducted all the statistical analyzes for all the cases. Rune Wigblad have also contributed by reporting the two cases of Fundia Steel, the Wire Rod case and the Cabinet Factory case.

3.5.4 A Holistic Approach to the Productivity Paradox

The paper, *A Holistic Approach to the Productivity Paradox*, is co-authored with Rune Wigblad and John Lewer. Magnus Hansson has primarily provided a review of the closedown literature, parts of the empirical presentation as well as the analysis. The rest of the paper has been jointly developed.
3.5.5 Thesis

The thesis in this thesis has been solely provided by Magnus Hansson. This includes the chapters on introduction, research design and some methodological considerations, results of the papers, discussion of some practical implications and propositions for further research.
4 Results

In this chapter I outline the results, originating from the empirical work that has been conducted, the papers of this thesis, as well as the literature. It is from this body of evidence and results that the pattern of explanations is derived. I begin this chapter by discussing how the pattern of explanations has been developed, applying an empirically-close methodology for structuring the information. This is followed by a critical reflection on the limitations and applications of the methodology. From this the major variables of explanations are identified and analyzed.

4.1 A note on the development of a pattern of explanations to the Closedown effect

Inspired by Corley and Gioia (2004), Gioia and Thomas (1996) and Elsbach and Kramer (1996), among others, approaches for analyzing data and develop theory I here outline the basic concept of how the papers and the adjacent literature are being analyzed in order to develop a pattern of explanations of contributing factors to enable a better understanding of the appearance of the Closedown effect. It should here be noted that the Closedown effect represents a complex phenomena and has received little attention in previous research why the ambition of this pattern of explanations should be to generate a tentative outline, rather than making a claim of a finite pattern (See chapter 4.1.1).

A main emphasis of an empirically-close approach provides a base for rigorous collection and analysis of qualitative data. It also provides a support in “determining sampling and content foci of later data collection” (Corley & Gioia, 2004: 183).

Applying an empirically-close approach for analysis it is here argued that it is relevant for different purposes, such as describing a certain phenomenon as well as a better theoretical understanding for a certain field of research (Gustavsson, 1998: 31). The specific meaning of this empirically-close approach is to highlight a hidden phenomenon in order to develop theory. Below I outline a set of arguments and clarify the procedure that has been applied in order to identify concepts, aggregation and compilation of themes as well as aggregated dimensions in order to develop the pattern of explanations to the Closedown effect.
First, I will begin the analysis by identifying initial concepts, extracted from the papers or the literature, and group them into categories (open coding), in order to develop 1st order concepts (cf. Van Maanen, 1979; Corley & Gioia, 2004; Gioia & Thomas, 1996; Elsbach & Kramer, 1996).

In order for a factor to be considered and extracted to become an initial concept it must hold an explanatory value to the Closedown effect and appear as an explanatory factor in (any of) the papers or in the literature. A form of constant comparison (cf. Strauss & Corbin, 1990) is used here to triangulate comparative data from different informants, times and sources of information in order to discern the shared concepts (cf. Gioia & Thomas, 1996).

In the development of the 1st order concepts a review of each of the papers of this thesis has been conducted in order to identify potential factors or concepts that hold an explanatory value to the Closedown effect. This is done in a way where arguments related to explaining the Closedown effect are scrutinized and extracted into the open coding (Corley & Gioia, 2004). In the first sequence of the analysis a table (See chapter 4.3) is outlined on the major explanatory variables that are identified.

The identified variables are given conceptual labels similar to concepts, as they appear in the different papers. My ambition here is to develop conceptual labels that are representative, and empirically closely related, for the context derived from the arguments outlined in the different papers.

In occasions where conceptual labels are somewhat similar but differ in their expression, examples of evidence from the papers is provided, as shown below on how the different papers complement each other, representing the phenomenon (Strauss & Corbin, 1990: 62ff; See chapter 4.2). Once a particular explanatory factor has been identified in the papers, concepts are grouped around them. This is done in order to reduce the number of units, and to theoretically abstract concepts to related themes and aggregated dimensions. When developing categories, it becomes essential to consider each category’s properties and dimension. This is done for the formation and relationships between categories and the development of an explanatory pattern as well as taking into account their temporal dimension.
Second, I will conduct an axial-coding in order to search relationships between and among these categories, in order to assemble them and develop 2nd order themes (cf. Van Maanen, 1979; Corley & Gioia, 2004; Gioia & Thomas, 1996; Elsbach & Kramer, 1996). These 2nd order themes intend to capture the 1st order concepts at a higher level of abstraction. The axial coding that is here conducted, follow the procedure whereby the data is put back in new ways following the open coding, making connections between categories in a relational form.

The procedure that is carried out here is done in order to generate density and precision (cf. Strauss & Corbin, 1990: 97ff). The 2nd order themes are given their labels either by developing a more general label that subsumed the 1st order concepts or by reference to the existing literature that describes the emergent themes well.

That is, the axial coding is conducted in a way where commonalities between concepts are sought and developed. This is done to an analytical procedure of identifying adjacent commonalities among concepts in order to develop the second order themes. For example, relating different categories of workers experienced threat to one specific category. Density and precision is received through the development of the categories, and the descriptions of commonalities between the concepts. Another example here can be how the 2nd order theme ‘change in management control’ is derived from the empirical evidence and the 1st order concepts of how management abolishes the requirements of a specific level of productivity, post the closedown decision as well as the diminishing management control over daily operations. These two are examples of concepts that are related to each other and indicate, on an aggregated level, a change in management control.

Causal conditions and context will be elaborated in juxtaposition to the emergent model (See chapter 4.4). More specifically, in this approach subcategories are linked to a category in a set of relationships focusing the studied phenomenon, causal conditions, context, intervening conditions, actions(s)/interactional strategies and consequences (cf. Strauss & Corbin, 1990, 100ff).

This implies that all the identified explanatory variables and concepts are related to the general theme of the papers – the Closedown effect. This is put in relationship to the specific events and incidents that lead to the occurrence and development of the phenomenon. Some
of the explanatory variables are context specific, for example dependent of the managerial setting for the closedown process, and represents the specific set of properties that pertain to the phenomenon. Further, in the analysis attention is also given to how certain conditions either facilitate or constrain the actions(s)/interactional strategies taken within the context.

The action(s)/interactional strategies have its certain properties. They can be processual as well as purposeful and goal oriented. Here this implies that the dynamics of the explanatory factors, concepts and themes will be considered dynamically. For example, some of the concepts and themes are likely to hold a stronger explanatory value in the initial stages of a closedown process vis-à-vis weaker explanatory value in later stages. In other words, I here take into account the temporal dimensions of the concepts and themes. This is done through the descriptions of each concept where consideration is taken to the factor’s explanatory power in the different phases of the closedown process. Finally, action(s)/interactional strategies to the phenomenon and context have certain consequences or outcomes that can differ dependent of the actual conditions, which are also taken into consideration to the extent that the closedown process can be analytically divided in different phases (cf. *Pyrrhic Victories – Anticipating the Closedown effect* paper).

*Third*, based on these 2nd order themes I will compile them into aggregated analytical dimensions (cf. Corley & Gioia, 2004; Gioia & Thomas, 1996; Van Maanen, 1979; Glaser & Strauss, 1967). Comparing each of the themes it becomes essential to locate each property dimensionally (Strauss & Corbin, 1990). Doing so develops the pattern of explanations to the Closedown effect and adds conceptual clarity and density. Clarity in the sense that the properties of each aggregated dimension is clear and demarcated from other aggregated dimensions. Density in the sense that each aggregated dimension is given a ‘thick’ description in order to generate a substantial information and explanation to each of the identified aggregated dimensions.

The applied technique is not linear but provides a process-oriented analytical procedure. This procedure will continue, as proposed by Corley & Gioia (2004), until I receive a clear picture of the emerging relationships among the identified factors of explanation until saturation is reached (cf. Glaser & Strauss, 1967, Strauss & Corbin, 1990: 60ff; Eisenhardt, 1989). In this case, saturation implies that no new or relevant data seem to emerge regarding a specific category. The category development holds the ambition to generate a dens, rich and extensive
description of each variable as well as to provide an outline of the relationships between categories (cf. Strauss & Corbin, 1990: 188; See chapter 4.1.1).

The advantage of applying this approach for analyzing the results of the papers is that I will be able to extract factors of explanations independently of the level of analysis and focus of the different papers. From this extraction I am being able to develop the 2nd order themes and later aggregated analytical dimensions in order to outline a pattern of explanations (See chapter 4.1.1).

In the following chapter I begin with a presentation and examples of the major variable that are identified in the different papers and from that structure the data. This presentation serves as the foundation from which the elaboration on the pattern of explanations is derived, abstracting information in terms of modeling and theorizing. In the discussion of the relationship among the 2nd order themes and the aggregate dimension I also relate this to previous research. However, I will begin by conducting a critical reflection on the development of the pattern of explanations.

4.1.1 A critical reflection on the development of a pattern of explanations to the Closedown effect

A critical question that is raised here is whether the extracted results from the papers are comparable to the extent that they can serve as a base for the development of a pattern of explanations. Such discussion needs to take into consideration the similarities and differences in methodologies, theoretical frameworks, empirical and contextual settings and level of analysis that are applied.

First, the methodological considerations in the papers are somewhat similar as it comes to empirical data collection through interviews, observation and analysis of productivity statistics and various types of documents. However, the critical analytical review approach that is applied in the Recontextualizing the Hawthorne effect paper is somewhat different from the empirical field work that has been carried out in other papers.
On the one hand side it could be argued that that applying different, yet complementary, methodologies would be of a benefit to the extent that explanatory factors can be identified through both critical analytical review as well as field work, which in one aspect that can be a strength. As previously argued, the iterative approach have successively improved and clarified the focus of my studies. I am considering this as strength in the sense that explanatory factors can be identified from both the literature as well as from field work.

Being fair to the critical analytical review, comparability, between the Closedown effect and the Hawthorne effect, rests on the analysis of the previous closedown studies in which some of these reports are found within this thesis. This can be seen as a deficiency. However, with limited previous research it could be argued that by testing and applying it to other streams of literature, previous closedown studies can be put under test and validation Through such approach, additional (and potential) explanatory factors to the studied phenomenon can be identified and strengthen the analysis and the development of a pattern of explanations.

When it comes to the applied analytical procedures there are some differences. As discussed in chapter 3.1, an explorative approach has been argued as relevant to encounter a field of research that has been somewhat a neglected topic in organizational science. In the different analyzes, adjacent and anteceding literature has played an important role for the operationalization of explanatory factors as it has served as a lens through which the studied phenomenon has been viewed.

Even if there are difference in analytical procedures to the extent that both qualitative data and statistical analyzes have been applied there are paradigmatic similarities among these procedures. A broad approach has been applied in order to expand the research domain of a previously (or at least to some extent) unknown and under limited research-work phenomenon. The applied explorative approach has provided an opportunity to cover the width, depth and longitudinal aspects of the Closedown effect (cf. Wigblad, 1997). This by taking into account existence of the Closedown effect in multiple cases through fact-finding and statistical analysis, incorporating endogenous and exogenous variables of explanation in a holistic perspective and productivity development over time through a fine-tuned processual based analysis of a closedown process.
It should also be noted that the explorative approach does not imply an eclectic approach to incorporating multiple methods and theoretical frameworks. Rather, it has been focusing on maintaining a paradigmatic fit of the applied methodologies and theoretical framework (Edmondson & McManus, 2007) It is also argued that the applied methodological considerations are not in glaring contrast to one another, rather complementary and for that reason comparable (See chapter: 3.3).

Second, the applied theoretical frameworks are similar to the extent that they primarily draw upon the same type of downsizing and closedown literature (See chapter 2.1). That is, the papers draw primarily on the same type of literature. Analyzing the theoretical conceptions, and the majority of the core references that are applied in this thesis, indicate that they are mainly situated within the same paradigmatic domain of a functionalistic approach. That is within, or adjacent, to the social systems theory (cf. Burrell & Morgan, 1979: 86ff.).

In short, this thesis paradigmatic domicile is primarily situated within the social action theory within the functionalistic approach (cf. Burrell & Morgan, 1979: 83ff). The social action theory is one of the paradigmatic domains within the functionalistic paradigm (Burrell & Morgan, 1979). Within the social action theory realm explanations of the social world has to be adequate on the level of meaning. Explanations to social affairs have to take into account of the way in which individuals attach subjective meaning to situations and orient their action sin accordance with their perceptions of those situations. The social action theory holds the ambition to incorporate idealist and positivist approaches to the study of society, bounded by the functionalistic border to subjectivistic approaches. Application of the social action theory consists of a whole range of ontological, epistemological and methodological assumptions (cf. Burrell & Morgan, 1979: 87).

Arguably, this allows comparability among the papers as it comes to the theoretical frameworks. Even if the core theoretical frame is maintained within the same domain I have applied certain adjacent concepts, such as the one on management-worker relations in the When the Lights Go Out paper. Analyzing these concepts it is argued that they have a paradigmatic fit to the core theoretical frame and therefore provide a theoretical extension as well as enabling analysis of the papers.
It is also possible to raise the question whether it is relevant or possible to conduct cross-context theory analysis, here, if it is possible to apply the downsizing literature on the closedown context. It is argued that, and drawing upon a recent paper by Littler and Hansson (2007); these two streams have been relatively isolated to each other. Still, they are comparable to the extent that they focus workforce reduction strategies such as layoffs as well as perceived threat of job-loss. These streams of literature are therefore not seen as mutually exclusive, rather complementary (See chapter 2.1).

Third, the empirical and contextual settings are similar to the extent that the vast majority of the referred cases focus manufacturing industries. In most of the cases the closing plant has been situated in a local community dominating the industry structure. Regarding the contextual setting it is possible to take into account the various variables (for example size, age, environment, strategy, among others) for the contextualization of the closing firms. This has not been the focus of any of the studies, rather considering on the intra-organizational dynamics.

However, it should be noted that not all of the referred cases are within manufacturing industries (e.g., Sutton, 1987). Notably is the fact that these non-manufacturing industry cases do not play a central role in any of the papers or in the analysis. This as similar outcomes, regarding the productivity development during the closedown process, has been recorded and noted in the *Pyrrhic Victories – Anticipating the Closedown effect* essay.

It is therefore argued that there is comparability among closedown cases, despite the fact that the closing organizations not fully hold the same empirical and contextual setting. Still, in any comparative study it is hard to actually receive a perfect match in these settings.

Fourth, the level of analysis is also important to take into account as it comes to comparability among the papers. It becomes evident that focus is on the business level of analysis. Comparability to other levels of analysis is therefore cumbersome and to some extent also impossible.

Fifth, it is also argued that comparability rests upon the assumption that the phenomenon studied, the Closedown effect, is the dependent variable in all papers. As previously outlined
(See chapter 1), there is always a need for a systematic approach when comparing and analyzing results from different studies.

As with comparative studies, there are often more or less deficiencies in the comparisons. Every methodology, theoretical framework, empirical and contextual setting as well as level of analysis holds its limitations, why I here have had the ambition to bridge these. Despite of the deficiencies, what are seen as more relevant here are the dynamics and the somewhat paradoxical outcome of closedown processes and the insights that will be presented through the analysis of the papers and on the development of a pattern of explanations.

**Sixth**, the pattern of explanations that is being outlined is not a finite model in the sense that the interaction effects are being measured or significantly determined through a statistical analysis. Rather, the pattern of explanations should primarily be seen as *tentative*. In the propositions for future research on closedowns it is however suggested that the outlined tentative pattern of explanations should be tested through the application of complementary methodologies, for example surveys and statistical analyzes (See chapter 6). In the following text I elaborate on the pattern of explanations, with the subjection of viewing it as yet tentative.

**Seventh**, a note should also be made that by developing a pattern of explanations to the Closedown effect I enable an extension of the research domain on closedowns, through the application of an explorative approach. The advancement of the extension of the research domain is somewhat asymmetric (or uneven distribution) primarily because of the specific variables. Some of the variables have been analyzed in previous works, whereas others are nascent discoveries as explanatory variables to the Closedown effect. In some cases it has been possible to analyze categories/variables with support from previous literature, whereas others have received little attention in previous research and are therefore limited in the extensions (See chapter 6).

**Eight and final**, as argued by Weick (1995: 387), “a difficulty arises because theory work can take a variety of forms, because theory itself is a continuum, and because most verbally expressed theory leaves tacit some key portions of the originating insight”. Weick (1995) urge for the need of more precise descriptions of what is being abstracted, and how references are being used.
Data itself is not theory and theory does not capture all the information in data. Still, there is a risk that researchers confuse data with theory and may simply be midway through the process of generating theory or theorizing on a certain phenomenon. Lists of variables are farther from a well-developed theory than are stories, but a list of variables can serve as a foundation from which theory can be developed. The tacit message in a list is that items not on this list are less crucial determinants than those that are on it. “But as long as there is an implied set of relations among items in the list, or one can infer such relations, there are the beginnings of a theory” (Weick, 1995: 388). These outlined arguments by Weick (1995) points to a serious matter in research and on the development of theory.

Following Van Maanen, Sørensen and Mitchell (2007), theorizing is how researchers think about the relationships among elements in the world that are given researchers attention. The social world is complex and hard to isolate from random noise. If researchers pay too much attention to available or potentially available data, researchers are trapped by operations, and theorizing is stifled. If researchers pay no attention to data, our theorizing will be rather too remote and will occur all on the conceptual plane. In neither case, the potential interplay between method and theory is limited. Researchers play a central role here because they must be designed so that they sufficiently respect both the primacy of theory and the primacy of evidence.

I do not assert the ambition of developing a full-fledged, grand or middle-range theory (cf. Merton, 1979), rather providing a serious effort on the development and outline of a tentative pattern of explanations. Rather, I hold the ambition of a process of theorizing consisting of activities such as abstracting, generalizing, relating and explaining. “These ongoing activities intermittently spin out reference lists, data and list of variables. Those emergent products summarize progress, give direction, and serve as placemarkers. […] They have vestiges of theory but are not themselves theories” (Weick, 1995: 389). Still, there is a trade-off between theory and theorizing. One of the contributions of this thesis is the theorizing and outline of a tentative pattern to the Closedown effect phenomenon.
### 4.2 Major variables identified

The key variables that were identified and assessed to explain the Closedown effect during my thesis work are listed below. Items on the list appear in my four publications on the Closedown effect. Alongside each variable is an example of its explanatory factor identified in the literature review or empirical evidence based on the case studies of this thesis.

<table>
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<tr>
<th>#</th>
<th>Explanatory category/variable</th>
<th>Examples of arguments from the papers</th>
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<tbody>
<tr>
<td>1</td>
<td>Change in the given institutional and economic structure.</td>
<td>The structural elaboration/disorganizing is a first order change. The initial strain of the closure threat announcement triggers a causal chain where individual reactions take the form of collective actions. These create pressure to change the institutional structure. The reorganization is its feedback loop, which is a second order change. The reorganization reorders the given institutional and economic structure. The initially given economic structure is viewed as a state that is altered dynamically. The dynamics involved include elaboration and restructuring by feedback loops, which are connected to the interplay between the company management, its competitive environment and the rest of the institutional structure (A Holistic Approach to the Productivity Paradox paper).</td>
</tr>
<tr>
<td>2</td>
<td>Management abolish specific productivity-level requirements after the closedown decision.</td>
<td>Managers’ and supervisors’ interest in maintaining the established workplace order fades in a dying organization. Plans for daily operations during the closedown, including investments, are no longer at the top of the management agenda. Further, operations can be speeded-up by workers, as they can focus on the task since they no longer need to solve other problems or issues in the organization. (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper; A Holistic Approach to the Productivity Paradox paper).</td>
</tr>
<tr>
<td>3</td>
<td>Market conditions limits the speed with which a closedown</td>
<td>Market conditions often limit the possible speed of the closedown i.e. there is still a short-term need for the flow of goods from that particular organization. (Pyrrhic Victories – Anticipating the Closedown effect paper)</td>
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<td></td>
<td>can be carried out.</td>
<td>Business conditions can limit the possible speed of the closedown. Taking into account different possibilities such as a closedown equal non-continuity. This indicates that the organization (or parts thereof) develops a form of discontinuity. Another possibility is some continuity of business processes under new ownership. This implies that the organization is transformed; legal form may cease to exist but is (to some extent) continued under new ownership. Yet another alternative is a temporary cessation – with restart or reversion to any of the two previous alternatives. This alternative indicates that the organization is temporary stopped, idle or an abrupt end to organizational activities due to strong external force, before new decision-making of non-continuity or some continuity (A Holistic approach to the Productivity Paradox paper).</td>
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<tr>
<td>4.</td>
<td>Business conditions limit the speed with which a closedown can be carried out.</td>
<td>Technical conditions can limit the possible speed of the closedown, particularly when complex production processes, involving technical skills and tacit knowledge are relocated. (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect; A Holistic Approach to the Productivity Paradox papers).</td>
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<tr>
<td></td>
<td>Technical conditions limit the speed with which a closedown can be carried out.</td>
<td>Many countries have legal frameworks governing employer – employee relationships. For example in regarding restructuring, Swedish legislation stipulates management must inform the labor union changes in the firm’s production and financial plans, and manpower levels. At a unit level, management must also provide information such as accounting, strategic documents and guidelines. Typically legislation addresses labor union’s ability to act through strikes and other similar actions. (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper).</td>
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<td>6.</td>
<td>Legislation that stipulate the relationship between management and labor union.</td>
<td>In Sweden, legislations states firms must give employees advance notice that their employment will cease. This typically equates to the minimum closedown period. Depending upon the size of the affected workforce, this means minimal closedown periods are between three and six months. (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper).</td>
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<td>8.</td>
<td>Conduction of the arguments and calculations for the closedown decision, and wage-earners consultants.</td>
<td>Local unions and employees often disagree with the financial grounds for closure. E.g. Sandvik Steel’s Gusab closure announcement. Often local unions seek expert advice i.e. a wage-earner consultant conducts another analysis of the arguments in favor of closure. In this and other cases, there are often different views on the financial estimates e.g. savings after the site is closed, costs for restructuring, costs for education, etc. So it was concluded there was no need for the Gusab closure. In the Sandvik Steel case, corporate management dismissed the wage-earners information and report (When the Lights Go Out paper). Local negotiations also got bogged down. Objections to closedowns can also be made, which can extend the minimum closedown period e.g. Local Sandvik Steel management considered decision to closedown the unit they management was made on erroneous grounds and demanded a serious investigation. At corporate level, Sandvik Steel agreed upon this, in accordance to Swedish legislation. (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper; A Holistic Approach to the Productivity Paradox paper).</td>
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<td>9.</td>
<td>Bargaining power of the labor union.</td>
<td>The labor unions have certain bargaining powers, which can be legally stipulated or dependent on the historic relationships. Labor union can prolonging closedown period through the negotiations. However these possibilities can be somewhat limited due to the decision making system. Labor union bargaining may particularly affect the extent and composition of any HRM program associated with the closedown (A Holistic Approach to the Productivity Paradox paper).</td>
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<td>10.</td>
<td>Survival of the local municipality – mobilization and uniting efforts of stakeholders.</td>
<td>Especially when the closing organization is situated in a local community or company town, uniting efforts by local community stakeholders can mobilize and provide support to the closedown victims (A Holistic Approach to the Productivity Paradox paper).</td>
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<td>11.</td>
<td>Official authorities (e.g., local municipality, government, county)</td>
<td>Closedowns in small communities can severely affect that community. Local municipality, county administrative board and the governments may take action to preserve employment. E.g. Gislaved tire manufacturing and Gislaved studding faced governmental pressure to continue production. through collective and coordinated actions. (Pyrrhic</td>
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### Explanatory category/variable

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<td>administrative board, employment agency) action.</td>
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<tr>
<td>12.</td>
<td>Mass media reports from the closure site generating civil debate.</td>
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<td>13.</td>
<td>Conflicts between stakeholders generate tension.</td>
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<td>14.</td>
<td>Conflict frequency and speed of resolution.</td>
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<td>15.</td>
<td>Reduced proactive maintenance.</td>
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<td>17.</td>
<td>Changed assortment to be produced.</td>
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</tbody>
</table>

12. Mass media reports from the closure site generating civil debate. Mass media can play an important role by drawing attention to the closedown. This can initiate debate as well as reveal information that was not known to the workers of the closing organization (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper).

13. Conflicts between stakeholders generate tension. Relationships between management and labor unions can change during the closedown process. E.g. Prior to the actual closedown decision, there can be a high level of conflicts and dispute about the need for closedown decision. A socially responsible approach to HRM-program negotiations and the composition of the HRM-program can reduce conflict during the negotiation process and countdown periods (When the Lights Go Out paper).

14. Conflict frequency and speed of resolution. The level of conflicts and speed of conflict resolution co-varies with the workers confidence (or trust) in management (Cutcher-Gershenfeld (1991)). When there are many conflicts and conflict resolution is slow, confidence in management is low and vice versa. As the number of conflicts and speed of conflict resolution fluctuated during the closedown period, so did worker confidence in management. (When the Lights Go Out paper).

15. Reduced proactive maintenance. Due to the wear down strategy of the plant that is closing, proactive maintenance was limited (When the Lights Go Out paper).

16. Enhanced resource utilization of production equipment. Resource utilization slightly increases as a consequence of enhanced efforts among the workers and the willingness of perform reasonably well. (When the Lights Go Out paper)

17. Changed assortment to be produced. A new steel wire rode production program was assigned to Smedjebacken during the closedown period (Pyrrhic Victories – Anticipating the Closedown effect paper).
<table>
<thead>
<tr>
<th>#</th>
<th>Explanatory category/variable</th>
<th>Examples of arguments from the papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Production for stock.</td>
<td>As a safeguard during the transfer process, the production mix at Gusab slightly changed so they could build stock levels. (When the Lights Go Out paper).</td>
</tr>
<tr>
<td>19</td>
<td>Establishment of the management setting for the closedown process</td>
<td>Following the categorization of the managerial setting; Management decides the closedown setting by providing either a socially responsible (SR) or a Non-socially responsible (Non-SR) setting. From the papers it has been evident that, and independently from the setting, productivity increase, with the recorded Closedown effect (Pyrrhic Victories – Anticipating the Closedown effect paper).</td>
</tr>
<tr>
<td>20</td>
<td>Diminishing management control over daily operations.</td>
<td>Productivity rises when management reduce their control over everyday production operations and management’s commitment and attention are both low (Recontextualizing the Hawthorne effect paper; When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper).</td>
</tr>
<tr>
<td>21</td>
<td>Increased autonomy for the workers as individuals.</td>
<td>Diminishing management control means workers have some level of autonomy. This autonomy means individual workers can act, plan and go about with their work in a way they found appropriate. (Pyrrhic Victories – Anticipating the Closedown effect paper; Recontextualizing the Hawthorne Effect paper).</td>
</tr>
<tr>
<td>22</td>
<td>Reduced formalization on job-routines.</td>
<td>Managers and supervisors’ interest in maintaining the established order, and workplace and routine formalization, at the workplace fades away in a dying organization (When the Lights Go Out paper; Pyrrhic Victories Anticipating the Closedown effect paper; A Holistic Approach to the Productivity Paradox paper)</td>
</tr>
<tr>
<td>23</td>
<td>Worker initiated changes in work design.</td>
<td>With their newfound autonomy workers innovative. Workers initiate changes in work-design. (When the Lights Go Out paper; Recontextualizing the Hawthorne Effect paper)</td>
</tr>
<tr>
<td>24</td>
<td>Development of informal leadership.</td>
<td>Informal leadership grew stronger throughout the closedown process, and legitimized by the workers informal leaders’ actions and a unanimous group-decision, workers continued their work. (When the Lights Go Out paper; A Holistic Approach to the Productivity Paradox paper)</td>
</tr>
<tr>
<td>#</td>
<td>Explanatory category/variable</td>
<td>Examples of arguments from the papers</td>
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<tr>
<td>25.</td>
<td>Development of informal groups.</td>
<td>As the management interest decreased, informal groups grew stronger in taking control over the day-to-day operations. (Recontextualizing the Hawthorne effect paper).</td>
</tr>
<tr>
<td>26.</td>
<td>Increased specialization through reduction in job rotation.</td>
<td>Workers were keen to stick to specific tasks, which decreased the job rotation (When the Lights Go Out paper).</td>
</tr>
<tr>
<td>27.</td>
<td>Collective manifestations bring the worker-collective closer together</td>
<td>Closedown obviously creates a conflict between management and workers, which often results in a collective workers protest. Other workplaces e.g. the local municipality may also participate (Pyrrhic Victories – Anticipating the Closedown effect paper)</td>
</tr>
<tr>
<td>28.</td>
<td>Threat to the workers generates rigid behavior.</td>
<td>A closedown decision leads to psychological responses in terms of psychological stress, anxiety and arousal. Under stress, individuals perceive unfamiliar stimuli in terms of previously held internal hypotheses. Psychological stress, anxiety and arousal leads to behavioral-response rigidities. The greater psychological stress, anxiety and arousal the stronger the tendency of emitting well-learned or dominant responses will be. (When the Lights Go Out paper; Recontextualizing the Hawthorne effect paper)</td>
</tr>
<tr>
<td>29.</td>
<td>Threat as a driver of either positive or negative productivity outcomes.</td>
<td>Negative reactions to a prevalent threat do not generate a positive (stable or positive) productivity development. When there is an informal consensus about objectives, another reaction to threat is to increase productivity. (Recontextualizing the Hawthorne effect paper).</td>
</tr>
<tr>
<td>30.</td>
<td>Worker’s sensitivity to information from the management.</td>
<td>Workers reactions to information from management have a direct relationship to the productivity development and can explain the fluctuations productivity. The content of the (management’s) closure announcement therefore affects how workers construct a changed reality for the enterprise and their role up to the closure date (When the Lights Go Out paper).</td>
</tr>
<tr>
<td>#</td>
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<tr>
<td>31.</td>
<td>Pride in the work role — Craftsmanship.</td>
<td>As the closedown decision was announced, formal group leaders and labor unions encouraging employees to maintain their production so they can maintain their pride. It is better to work than sit (When the Lights Go Out paper; A Holistic Approach to the Productivity Paradox paper)</td>
</tr>
<tr>
<td>32.</td>
<td>Self-esteem to perform well.</td>
<td>A litany of personal negative effects, too, is typically experienced by displaced workers; ‘shock, disbelief, anger, hurt, sense of powerlessness, loss of confidence and self-esteem’ Also, the burgeoning downsizing literature generally concludes that workers experience a changed and weakened psychological contract with their employer. However, in closedown contexts worker take pride and hold self-esteem to perform well. (A Holistic Approach to the Productivity Paradox paper)</td>
</tr>
<tr>
<td>33.</td>
<td>Anti-management – “let’s show them that decision was wrong”.</td>
<td>Workers wanted to show Sandvik Steel that their decision was wrong and had hopes for a revised decision why they were particularly careful on keeping their machines running, even during coffee ‘breaks’ (When the Lights Go Out paper).</td>
</tr>
<tr>
<td>34.</td>
<td>Momentary hope for prolongation of operations.</td>
<td>Periods with increase productivity immediately after the possible closedown announcement are primarily associated with workers increased hopes of continued plant production (When the Lights Go Out paper; Pyrrhic Victories – Anticipating the Closedown effect paper)</td>
</tr>
<tr>
<td>35.</td>
<td>Seeking ‘ideal’ references to assist future job searches.</td>
<td>To help secure new employment, individuals endeavor to obtain favorable references from their closedown employer (When the Lights Go Out paper; Recontextualizing the Hawthorne effect paper).</td>
</tr>
<tr>
<td>36.</td>
<td>HRM programs dampen the negative reactions.</td>
<td>The HRM-program was discussed and the workers found it to be a fair deal. As the HRM-program was negotiated, workers became pleased with the deal and conflicts decreased whereas productivity increased subsequently (When the Lights Go Out paper).</td>
</tr>
<tr>
<td>37.</td>
<td>Incentive production bonuses.</td>
<td>Payment incentive schemes provide higher salaries during the closedown. Respondents said bonuses were particularly motivating immediately after the announcement, with their influence on motivation decreasing with</td>
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<td>Explanatory category/variable</td>
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<td></td>
<td>time (When the Lights Go Out paper; Recontextualizing the Hawthorne effect paper).</td>
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</tr>
<tr>
<td>38</td>
<td>Severance payments as an initial motivator for enhanced performance.</td>
<td>Workers receive favorable severance payments. (e.g., salaried and hourly workers (Pyrrhic Victories – Anticipating the Closedown effect; Brown, Schmitt &amp; Schonberger, 2004). Initially severance payments play an important motivating role, with their importance declining over time (When the Lights Go Out paper).</td>
</tr>
</tbody>
</table>
### 4.3 Data structure

Following the outlined procedure on the data analysis, this table structures the variables in the previous section into 1st and 2nd order concepts (See chapter 4.1). The numbers in the far left column correspond to the variable numbers in the previous table.

<table>
<thead>
<tr>
<th>#</th>
<th>1st Order concepts</th>
<th>2nd Order themes</th>
<th>Aggregate dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Change in the given institutional and economic structure.</td>
<td>Institutional and economic reordering</td>
<td>Managerial actions</td>
</tr>
<tr>
<td>2.</td>
<td>Management abolish specific productivity-level requirements after the closedown decision.</td>
<td>Change in management control</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Diminishing management control over daily operations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Establishment of the management setting for the closedown process</td>
<td>Managerial setting</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Conduction of the arguments and calculations for the closedown decision, and wage-earners consultants.</td>
<td>Labor union actions</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Survival of the local municipality – mobilization and uniting efforts of stakeholders.</td>
<td>External actors actions</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Official authorities (e.g., local municipality, government, county administrative board, employment agency) actions.</td>
<td></td>
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<tr>
<td>12.</td>
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<td>Alterations in production planning</td>
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<td>Production for stock.</td>
<td></td>
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<tr>
<td>13.</td>
<td>Conflicts between stakeholders generate tension.</td>
<td>Conflict dynamics</td>
<td>Conflict context</td>
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<tr>
<td>14.</td>
<td>Conflict frequency and speed of resolution.</td>
<td></td>
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<td>30.</td>
<td>Worker’s sensitivity to information from management.</td>
<td>Temporal reactions</td>
<td></td>
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<td>Self-esteem to perform well.</td>
<td>Worker identity</td>
<td>Perceived threat of job loss</td>
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<td>25.</td>
<td>Development of informal groups.</td>
<td></td>
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<tr>
<td>3.</td>
<td>Market conditions limits the speed with which a closedown can be carried out.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Business conditions limit the speed with which a closedown can be carried out.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Technical conditions limit the speed with which a closedown can be carried out.</td>
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<tr>
<td>6.</td>
<td>Legislation that stipulate the relationship between management and labor union.</td>
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<td>7.</td>
<td>Legislation that stipulates the minimum run-down period.</td>
<td></td>
<td></td>
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<tr>
<td>15.</td>
<td>Reduced proactive maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Enhanced resource utilization of production equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Worker initiated changes in work design</td>
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</tbody>
</table>

Table 9 Data structure - Progression of the categorical analysis
4.4 Towards a pattern of explanations to the Closedown effect

As noted the overall purpose of this thesis is to contribute to filling the knowledge-gap regarding closedowns. Specifically, to provide at theoretical foundation for and analysis of closedown in order to outline a pattern of explanations of contributing factors that enable a better understanding of the appearance of the Closedown effect. By fulfilling this purpose I will be able to answer the overall research question: How does, and what is the dominant pattern of explanations to, the productivity development during the process of closedown? (See chapter 1). An aspect to consider here is the need for incorporating multiple aspects and facets of the specific phenomenon studied in order to provide a dense and extensive coverage of the explanations to the closedown effect.

In the list of explanatory categories/variables (See chapter 4.2) each of the variables are given a reference number that will be referred to in the following discussion within brackets, in order to clarify linkages and provide evidence to the analysis to the extracted variables from the different papers.

![Diagram of Closedown effect]

Figure 1 Performance drivers in a closedown process – towards a pattern of explanations to the Closedown effect
It should be noted that this figure is no more than a graphical illustration of the identified performance drivers in a closedown effect build up by a few more theoretically elaborated concepts. This figure does not serve the purpose of outlining interrelationships and (inter)dependencies among factors.

The papers in this thesis indicate and elaborate on the Closedown effect as the dependent variable. As indicated in chapter 4.2 and 4.3, a complex of explanatory factors has been identified in order to outline a pattern of explanations to the Closedown effect.

As previously argued, there is a need for going beyond the appearance of the Closedown effect and the productivity statistics in order to generate explanations to and a better understanding of, the puzzling phenomenon (Bergman & Wigblad, 1999). For that reason it here becomes necessary to determine explanations and pin down explanatory variables.

It should here also be noted that there is no relative positioning among the antecedent explanatory variables. The reason to this is that from the papers and previous research it is not possible at this stage to sort or prioritize variables dependent of their explanatory power. Here, variables are only analyzed and put in relationship to the Closedown effect (See chapter 4.4.3).

### 4.4.1 Closedown effect

Previous research on closedowns has indicated a productivity increase effect – a Closedown effect (e.g., Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Harris & Sutton, 1986; Lewer, 2001; Sutton, 1987, 1983; Wigblad, 1998, 1995). Without capital investments and a context where a closedown (or more specifically plant closure) decision is made, productivity increases. It seems so that the Closedown effect is a human driven effect, why it is being analyzed in relationship to other non-capital investment driven productivity increase effects such as the Horndal effect and the Hawthorne effect (cf. Genberg, 1992; Gillespie, 1991; Mayo, 1933; Roethlisberger & Dickson, 1939).
As in the *Pyrrhic Victories – Anticipating the Closedown effect* paper, previous studies indicate that the Closedown effect can be anticipated in manufacturing industries as a consequence of a closedown decision. This thesis has indicated that the Closedown effect occur in different managerial settings, following the outlined categorization scheme.

Statistically testing the strength of the Closedown effect, as done in the *Pyrrhic Victories – Anticipating the Closedown effect* paper, indicate that the analyzed cases show a significant productivity increase in three out of four cases. It was only the aggregated measurement of the Cabinet Factory case that failed to be statistically significant, during a comparably long advance notice period. For that reason it would be relevant to conclude that in manufacturing industry closedown cases, management can anticipate the Closedown effect to appear during the countdown period, but not necessarily during the advance notice period, due to uncertainty among the workers regarding the outcome (See Figure 2). The empirical evidence indicates that when management is applying a Non-SR setting a downturn in productivity development is evident during the advance notice period. On the other side, this research has indicated that when applying a SR setting there are minor drop in productivity, recorded in some of the cases, development during the advance notice period.

Considering all the analyzed cases of this thesis, a somewhat similar pattern of the productivity development during the closedown period seems to be prevalent. This pattern indicates that there often is a downturn in productivity during the advance notice period, and a recovery during the countdown period (See Figure 2). From these cases it can be concluded that, it is primarily during the countdown period that the Closedown effect holds its strongest development.

It should here be noted that there are limitations in the possibilities to demarcate and analyze the antecedent explanatory variables to the Closedown effect to the conceptualization of the different phases in a closedown process. This is primarily due to the fact that the conceptualization was developed after the conducted case studies. The case studies had not taken into account such demarcation between the phases, rather focusing on the closedown process as a whole. This demarcation between the advance notice phase and the countdown phase was identified after the case study work was undertaken. Future research would therefore benefit from a more stringent distinction between the phases, particularly when collecting data.


4.4.2 Antecedents to the Closedown effect

Following the outline of the pattern of explanations, (See Figure 1) I here analyze the antecedent variables to the Closedown effect. The reason for doing so is that a description and analysis is needed for each of the antecedent variables, analyzed and put in relation to the literature. In the following section, a recapitalization of some of the discussion from the papers will be made, as the antecedents are derived from and build upon the arguments in the papers, as well as from the literature. Following this section is a critical reflection on the limitations of the pattern of explanations (See chapter 4.4.3). The outlined antecedent explanatory variables to the Closedown effect serves as the independent variables of the analysis.

4.4.2.1 Managerial actions

Managerial actions influence worker’s interpretations, their perceived level of threat as well as the relations between management and the workers, which can have either positive or negative productivity outcomes (cf. Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981; See chapter 4.4.2.5). However the Pyrrhic Victories – Anticipating the Closedown effect paper, questioned the impact of the managerial setting the Closedown effect was observed, in both socially and non-socially responsible settings. Nonetheless, the Closedown effect was more statistically significant in socially responsible setting [Variables 13; 14; 19].

In the systems theory model assessment managerial actions are important, particularly when management abandon productivity requirements - this releases tension between management and the workers and workers can act more freely [Variables 1; 2; 13; 14; 20; 24; 25].

Lysgaard (2001) among others, have identified a similar pattern in more general manufacturing contexts where there is a tension between management and workers (e.g., Hoel & Bael, 2006; Burawoy, 1979). In closedown context this tension release is manifested as of the economic and institutional reordering [Variable 1]. The casual chain is enhanced levels of collective actions around the closedown notice, which generates pressure to change the institutional structure after closedown decision. Whether and when actual change takes place
is dependent on managerial actions (Bélanger, Edwards & Wright, 2003; Buckley, 1967; Burawoy, 1979; Encinosa, Gaynor & Rebitzer, 2007; Hodson, 1991; Hoel & Bael, 2006) [Variables 2; 20; 21; 24]. It is noted that in downsizing contexts management are more actively involved in day-to-day operations (Cameron, 1994; Cameron, Freeman & Mishra, 1993; De Meuse, Mishra, Spreitzer & Mishra, 1998).

Productivity rises when the means of control over everyday production operations are reduced, when investment is lacking and management’s commitment and attention are both low. Management diminishes the means of control and operative space is gained for the workers. This increased operative space provides opportunities for worker autonomy, day-to-day rationalizations, collective action and self-organizing activities. As noted in the literature as well as evident from the papers, diminished management control has a positive effect on the productivity development as workers can find more operative space (See chapter 4.4.2.4; Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Cunningham, 1997; Lewer, 2001; Sutton, 1987) [Variables 2; 20; 21; 22; 23; 24].

_A Holistic Approach to the Productivity Paradox_ paper shows that management does not expect increased productivity during closedown. Expectations are more often set that productivity remains at previous levels. This is similar to the findings of Bergman & Wigblad (1999) and Sutton (1987), who also indicated that the requirements of certain levels of productivity are often abandoned during the closedown process [Variables 1; 2; 20].

Management’s interest in maintaining the established order at the workplace diminishes and so does the management control over daily operations, affecting the given institutional and economic structure (See chapter 4.4.2.7). Workers find increased operative space and previously negotiated levels of productivity become abolished. Here, the increased operative space implies that workers can go beyond previously established routines and procedures and even rationalize production. The increased operative space gain from reduce management control. In the high-performance work systems (HPWS) downsizing literature it is managers who match employee and organizational needs (Zatzick & Iverson, 2007, 2006; Littler et al., 2003, 1999; Brockner et al., 1988a, b, 1987, 1986a, b). In closedown workers self-organize and spontaneously match these needs (cf. Zatzick & Iverson, 2007; Meyer & Allen, 1997) [Variables 1; 2; 20; 21; 22; 24; 25].
Operations can also be speeded-up since workers can focus solely on the production task and are not distracted by problems or issues in the organization. This is sometimes possible as a wear-down strategy is often prevalent in a closedown context. This provides less interruption for (long-term) maintenance and repair of production equipment. Fewer projects, such as production or productivity enhancing ones, are likely to be initiated during a closedown process, providing the workers with more time in production. This provides more up-time and also enhances productivity (cf. Ichniowski, Shaw & Prennushi, 1997) [Variables 15; 16; 23].

Productivity often fluctuates dependent of the interpretations that workers do following managerial actions and information provisioning. For example, the Gusab case particularly shows the high degree of workers sensitiveness to management actions and information. Workers interpret these, adjusting efforts and performance accordingly [Variables 30; 33].

Around the closedown decision, a tension between management and workers is especially prevalent. Local management drives the process as a consequence of the formal decision, whereas workers often believe that the decision was wrong and maintain a preservative attitude for prolongation and continued activity. This tension between management and the workers generates a conflict context. As outlined by Chadwick, Hunter & Walston (2004), frequency in conflicts and speed of conflict resolution, among other factors, determine the performance of the workers. When conflicts are few and speed of conflict resolution is high, the tension between management and the workers is low. This affect the productivity development positively, vis-à-vis multiple conflicts and slow conflict resolution increase the tension between management and the workers, affecting productivity negatively (Chadwick, Hunter & Walston, 2004; See chapter 4.4.2.3) [Variables 13; 14; 28; 29; 34].

Pyrrhic Victories – Anticipating the Closedown effect suggests a socially-responsible managerial setting a HRM program is often provided, in Sweden. Management negotiates such programs, often with the labor union. These programs can initially have a positive effect on workers motivation as they sometimes include severance payments, production bonus, outplacement assistance and educational programs. From the empirical evidence it is argued that a HRM program holds a temporary dimension to the extent that it has a diminishing effect on motivation over time (See chapter 4.4.2.4). In a non-socially responsible managerial setting, usually such HRM program is present: However, the Fundia Steel case, as out lined in
The managerial actions in closedown contexts differ significantly from downsizing contexts, despite the similarities regarding work-force reduction. Contrary to an intensified management with increased attention to day-to-day operations and centralized decision-making in downsizing contexts (Cameron, 1994; Cameron, Freeman & Mishra, 1993; De Meuse, Mishra, Spreitzer & Mishra, 1998), management in closedown context diminishes and decision-making becomes decentralized (Bergman & Wigblad, 1999; Sutton, 1987 Cunningham, 1997). As argued, there are several similarities in-between both areas of research; however they have remained relatively isolated [Variable 20].

One stream of the downsizing literature involves high-performance work systems (HPWS), indicating high-commitment management. Similar to the mainstream of the downsizing literature, this indicates that management focuses activities and attention to day-to-day operations in order to enhance productivity (Zatzick & Iverson, 2007, 2006; Littler et al., 2003, 1999; Brockner et al., 1988a, b, 1987, 1986a, b). Contrary to this is the evidence from the closedown literature, indicating enhanced productivity without a present management. Instead of management action to match employee and organizational needs, workers self-organize and spontaneously match these needs (cf. Zatzick & Iverson, 2007; Meyer & Allen, 1997) [Variables 20; 22; 24; 25].

While the Closedown effect is observed independently of the managerial setting, the extent of the positive productivity effect is significantly more enhanced when conflicts are quickly resolved and closedown processes tend to unfold differently. In short and from the empirical evidence it appears to be shorter pre-notice and negotiation periods, fewer conflicts and faster conflict resolution in socially-responsible settings, compared to cases with non-socially responsible settings. This is being elaborated on below [Variable 19].

4.4.2.2 Counter-institutional action

In an attempt to counteract the closedown, various institutional stakeholders, such as the labor union, the local municipality, official authorities and mass media, take initiatives, including
strikes, protests, dialogues and articles. These often generate civil debate (e.g., Bamberger & Davidson, 1999; Dagens Nyheter, 2004, 2003; The Economist, 2006a, New York Times, 2006). Stakeholder action is particularly evident in local communities that are severely affected by the closure and so their local municipality, county administrative board and even national governments take joint actions in order to preserve employments [Variables 10; 11; 12; 30].

Counter-institutional actions tend to appear in a context where the system of representation, including union representation, along with other institutional dynamics encouraging of better consideration of employees, (state and communities) seem to be losing ground in favor of competitive and shareholder-oriented dynamics (cf. Beaujolin-Bellet, 2007). Further, there is reason to believe that institutional and industrial factors affect stakeholders in a closedown context, shaping (and re-shaping) norms of behavior (cf. McKinley, 1987; McKinley, Sanchez & Schick, 1995), including a threat-rigidity behavior, not only among the workers but also among managers (cf. Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981) [Variables 3; 4; 5; 10; 11; 12].

Mass media can sometimes play a significant role in providing attention to the closedown that is taking place. Through this attention a civil-debate can be initiated as well as revealing information that was not known to the workers of the closing organization. This can, as argued in the A Holistic Approach to the Productivity Paradox paper, with some support in the literature, affect the workers negatively with increased strain, stress, frustration, anxiety and dissatisfaction (cf. Shaw & Barrett-Power, 1997; Staw, Sandelands & Dutton, 1981) [Variables 12; 31; 32; 35].

Counter actions and increased external attention naturally affect both the workers and to some extent management. Negative publicity and civil debate can generate arguments for the workers to decrease efforts as well as provide the labor union with alternatives to a substantial set of human resource management-styled support. For these reasons, the negative outcomes of the counter-institutional actions can negatively affect the productivity development [Variables 9; 11; 12].

Another form of counter-institutional action is the activities and actions initiated by the labor union. According to Swedish legislation and the Co-determination Act, the labor union has
the rights to engage a wage-earner consultant in order to conduct an analysis of the arguments and the economical consequences (such as costs for restructuring, education, etc) of the closedown decision. Arguments from wage-earner consultant reports are often used by the labor union, in the negotiation and bargaining with management. The labor union has got a certain barding power that is on the one hand stipulated by legislation, as well as dependent on the historic relationship with the management. The labor union can have a possibility of prolonging the closedown period through the negotiations. However these possibilities can be somewhat limited due to the decision making system. The labor union can also affect the composition of a HRM program, if that is being associated to the closedown, through the negotiations with management [Variables 8; 9; 36].

This is particularly obvious when the closing organization is situated in a local community or company town, uniting efforts of the local community and stakeholders within the local community mobilize and provide support to the closedown victims. In some cases, and especially concerning closedowns that strike a local community severely, official authorities such as the local municipality, county administrative board and the government conduct joint actions in order to preserve employments [Variables 10; 11].

4.4.2.3 Conflict context

Management and labor union relationships sometimes change as a consequence of the closedown decision. Based on the empirical evidence from the Pyrrhic Victories – Anticipating the Closedown effect paper, when the managerial setting was such that conflicts were frequent and were slow to resolve, management was less socially responsible compared to other cases [Variables 6; 9; 19].

Taking into consideration the different conceptual periods that can be identified in a closedown process, and drawing upon the argument from the When the Lights Go Out paper: conflicts are often high during the pre-notice period because of a preservative and worker-protecting strategy and counter-arguments by the labor union regarding the closedown decision. Evidently from the empirical cases reported in the When the Lights Go Out and Pyrrhic Victories – Anticipating the Closedown effect papers, during both the negotiation and countdown periods, the level of conflict is often reduced. Compared to the productivity
development during the conceptual periods, during the pre-notice period, productivity remains stable from previous phases. During the advance notice period a drop in productivity occurs, as of the announcement of the closedown decision and it is during the countdown period that the productivity increase and the Closedown effect is being recorded more regularly (See Figure 2) [Variables 13; 14; 19].

Following the Cutcher-Gershenfeld (1991) outline of patterns in management-worker relations, identifying that the level of conflict and speed in conflict resolution and argues for a positive relationship to the employee motivation. The level of conflicts and speed of conflict resolution co-varies with the workers confidence (or trust) in management. A high level of conflicts and slow speed of conflict resolution, confidence in management is low, vis-à-vis low level of conflicts and high speed of conflict resolution, confidence in management is higher. As the level of conflicts and speed of conflict resolution fluctuated during the closedown period, so did the confidence in management [Variables 13; 14].

Managerial actions serve as the foundation, from which workers interpret through a raster represented by the closedown decision. The content of the (management’s) closure announcement affects the workers performance, because it influenced how they constructed a changed reality for the enterprise and their role up to the closure date. These interpretations are put in relationship to what level of confidence (or trust) that workers have in management. When conflicts are few and the level of confidence (or trust) in management is high, it is more likely for workers to enhance their efforts [Variables 13; 14; 30].

The level of conflicts and speed of conflict resolution co-varies with the workers confidence (or trust) in management. That is, with a high level of conflicts and slow speed of conflict resolution, confidence in management is low, vis-à-vis low level of conflicts and high speed of conflict resolution, confidence in management is higher. As the level of conflicts and speed of conflict resolution fluctuated during the closedown period, so did the confidence in management. Similar to Cutcher-Gershenfeld (1991), the transformation of industrial relations is from an adversarial frame of reference to a frame of reference that is rooted in the transformational setting, here due to the closedown decision and dialectics between management and the workers during the closedown process [Variables 13; 14; 30].
Taking into account the different periods in the closedown process, as outlined in the *Pyrrhic Victories – Anticipating the Closedown effect* paper, some tendencies can be identified in the closedown cases. During the pre-notice period, the level of conflicts and disputes are often high due to the preservative and worker-protecting strategy and counter-arguments regarding the closedown decision by the labor union. Consequently, the speed of conflict resolution tends to be low. During the negotiation period, the level of conflicts is often on a high level and the willingness of resolving conflicts low. During the countdown period, the level of conflicts often decrease and are resolved in a speedily manner [Variables 13; 14].

A high degree of conflicts and a low speed of conflict resolution negatively affect employee motivation. For example as in the Gusab case, as the HRM-program was negotiated and later presented, workers were pleased with that deal, conflicts decreased whereas productivity increased. On the other hand, as the negotiations with the potential new customer failed to materialize, the level of conflicts increased and productivity decreased (temporarily). The level of conflict will be dependent of actual events that take place during the closedown process, events that are being interpreted by stakeholders and serve as a source of action. Actions that come into practice are often related to workers ambitions to increase or decrease efforts that naturally affect the productivity [Variables 13; 14; 30; 36; 37; 38].

### 4.4.2.4 Worker autonomy

A closedown process generates certain dynamics in the organization. As argued, operations management is diminishing, this provides a scope of autonomy for the workers. Empirically and reported in the papers it has been evident that with diminished management control and increased autonomy, workers can act more freely and without intervention from management (Bergman & Wigblad, 1999) [Variables 2; 20; 21].

Increased autonomy provides operative space for the development of innovative skills and evolvement of informal leadership. This argument finds support in the literature from Bergman and Wigblad, (1999), who also argued that innovative skills develop in a closedown context [Variables 21; 22; 24; 25; 26].
The development of innovative skills provides opportunities for technical rationalizations. With an increased operative space of actions that goes beyond established routines and procedures due to the economic and institutional restructuring, workers can conduct day-to-day rationalizations and through this enhance productivity. It should however be noted that innovation in a closedown context primarily refer to successive and incremental improvements, rather than major changes and only to a minor extent provides enhancements in productivity, contrary to the arguments by Ichniowski, Shaw and Prennushi (1997), and there is only limited evidence from the case studies that support this finding [Variables 15; 16; 20; 21; 23].

Increased operative space for the workers positively affects employee motivation and act as a driver of enhanced performances, despite the fact of a prevalent threat of job loss. This is similar to the findings of Brown, Schmitt and Schonberger, (2004) and Bergman and Wigblad, (1999), who also indicated the same pattern of increased motivation as a consequence of increased operative space [Variables 21; 28; 29, 34].

There is also a tendency in a closedown context and as autonomy increases, that job rotation decreases. In some of the cases that workers are less keen on rotating between tasks especially if the local job-market if favorable and workers leave the organization earlier than planned, rather becoming specialized. The reduced switch-over times enhance resource utilization as operations can be speeded up; this also contributes to enabling an enhanced productivity. The empirical evidence as well as the literature provides weak support for this finding. For that reason a proposition is that further research is needed on how decreased job-rotation comes into practice and affects the productivity development in the closedown process [Variables 15; 16; 23; 26].

Increased worker autonomy can generate a certain degree of self-affirmation. Here following Petzall, Parker and Stoeberl (2000) it is argued that self-affirmation is a process with which an individual maintains an image of self-concepts and self-images. The process is activated when a worker feels that his/her integrity or adequacy is being threatened. A closedown decision is an example of such situation with a prevalent certainty of job loss. With enhanced autonomy in conjunction with pride in the work-role and craftsmanship, it can be posited that there is a fluidity of self-affirmation which allows the individual to affirm a self value by enhancing efforts. This suggests that there exist a system designed not necessarily to resolve specific
self-concept threat but rather to function as an ego-protector to maintain an overall concept of self-integrity (cf. Epstein, 1980; Petzall, Parker & Stoeberl, 2000; Steele, 1988). It should be noted that Petzall, Parker and Stoeberl (2000) and Steele (1988) primarily draw upon downsizing contexts but here applied in a closedown context. The reason for doing so is the similarities in outcomes regarding worker autonomy and self-affirmation, especially during the advance notice period [Variables 21; 31; 32; 35].

Worker autonomy holds a temporary dimension to the extent that it tends to grow stronger throughout the closedown process. Management attention is continuously diminishing in the closedown process, and workers can act more freely. Similar to this and as argued in the papers is the increase in individualization throughout the closedown process, as the importance of collective actions is decreasing [Variables 20; 21; 24; 25; 27; 31; 32; 35; 33].

It seems so that as worker autonomy increases and individualization grows stronger, productivity increase as of the appearance of the Closedown effect. The increased autonomy primarily provides human driven activities and to a minor extent technological rationalizations that positively affect productivity (When the Lights Go Out paper) [Variables 16; 21; 22].

Only limited research has been conducted on the dynamics of worker autonomy in both closedown and downsizing contexts. However, the findings and the arguments outlined here represents empirical findings and initial analytical conceptions as initiated in the papers and further research is needed on these dynamics.

4.4.2.5 Perceived threat of job loss

Employees experience a perceived threat of job loss in a closedown context, as closedowns in most cases equal employee termination. In the downsizing literature job insecurity and the survivor syndrome has served as a major explanatory variable to outcomes such as decreased efforts and decreased productivity. In a closedown context no such survivor syndrome exists. Rather contrary to downsizing contexts, efforts and productivity increases (e.g., Bergman & Wigblad, 1999; Greenhalgh & Rosenblatt, 1984).
A closedown decision leads to psychological responses in terms of psychological stress, anxiety and arousal. Symptoms are found to be widespread in communities afflicted by threat. Under stress, individuals perceive unfamiliar stimuli in terms of previously held internal hypotheses. Persons that are subjected to stress are less able to identify and discriminate unfamiliar stimuli. Psychological stress, anxiety and arousal leads to behavioral-response rigidities. Still, stress may act to increase drive level and stimulate dominant habituated responses. The degree of psychological stress, anxieties and arousal will affect reliance on internal hypotheses and prior expectations as well as the attention to dominant or central cues and away from peripheral cues. The greater psychological stress, anxiety and arousal the stronger the tendency of emitting well-learned or dominant responses will be. Stress, anxiety and arousal to a certain level can also provide an increased drive among the workers (Shaw & Barrett-Power, 1997; Cunningham, 1997). On the other hand, the perceived threat of job loss can also lead to it adversity, with denial, rage and anger, bargaining, depression, and in the end acceptance (Kübler-Ross, 1969; 1975; Blau, 2007) [Variables 28; 29; 34].

The cognitive and motivational manifestations come to expression in behavioral consequences. Performance increment when dominant cues and responses are appropriate for performance and opposite, decrement when dominant level responses are inappropriate for performance. When dominant responses are appropriate for performance, efforts and productivity tend to increase. The psychological responses indirectly affect the behavioral consequences (Sutton, 1987, 1983). The behavioral consequences indirectly feed back to the degree of experienced psychological responses continuously throughout the closedown process [Variables 28; 29; 34].

Staw, Sandelands and Dutton, (1981) claim that threat resulting from common or familiar problems may induce effective coping responses from individuals while threats arising from radical environmental change may bring on maladaptive reactions. Rather, this suggests that the anticipated maladaptive reactions can occur in some situations, but can hardly be seen as an aggregated fact over time.

Threat and more specifically the perceived threat of job-loss can work in different directions regarding the productivity development. The negative reactions and outcomes of a prevalent threat do not per se generate a positive (stable or positive) productivity development. Another reaction is when productivity increase due to the prevalent threat, an informal leadership,
informal hierarchy and consensus over objectives, in order to maintain a high productivity that evolves (See chapters 4.4.2.4 and 4.4.2.6) [Variables 21; 28; 29; 34; 36].

Contrary to the arguments on job insecurity within the downsizing literature, there is little evidence that indicate that the perceived threat of job loss have an enduring and negative effect on the productivity development in a closedown context. Rather, based on the empirical evidence from the Gusab case study, as reported in the When the Lights Go Out paper, that the perceived threat of job loss has a fluctuating effect on the productivity. That is, pinning down the productivity development, it appears to fluctuate throughout the closedown process partially, which is explained by the interpretations of emotional and behavioral responses to threat.

As management over daily operations is diminishing, the distance between the workers and the management increases, workers alienation becomes greater which leads to restrictions in information processing and constriction in control. The development of informal leadership can, but does not have to support workers alienation and the distance between workers and the management as well as the reliance on internal hypotheses, prior expectations and the attention to dominant cues. Psychological responses to managerial actions and information provisioning are therefore complex to predict, with workers intensifying or decreasing efforts and performance due to a complex of triggers and interpretations [Variables 20; 28; 29; 34].

Workers become sensitive to managerial actions and information provisioning. Consequently, workers intensify or decrease efforts and performance due to a complex of triggers and interpretations. The perceived threat of job loss, level of conflicts and speed in conflict resolution are examples of such triggers [Variables 13; 14; 30].

As noted, a closedown decision leads to psychological responses in terms of psychological stress, anxiety and arousal. Symptoms are found to be widespread in communities afflicted by threat. Under stress, individuals perceive unfamiliar stimuli in terms of previously held internal hypotheses. Persons that are subjected to stress are less able to identify and discriminate unfamiliar stimuli. Psychological stress, anxiety and arousal leads to behavioral-response rigidities. Still, stress may act to increase drive level and stimulate dominant habituated responses. The degree of psychological stress, anxieties and arousal will affect reliance on internal hypotheses and prior expectations as well as the attention to dominant or
central cues and away from peripheral cues, similar to the arguments of Weick (1979) [Variables 28; 29].

Workers perception of threat of job loss holds a certain explanatory value to the Closedown effect. Initially and closely related to the closedown decision the threat of job loss generates certain dynamics and affects workers level of confidence (or trust) in management. With increased worker autonomy and increased individualization together with the successive phase-out of employees, highlights the threat of job loss, the closer single individuals come to their final day at work. The perception of threat of job loss is prevalent from the point of rumors start to evolve and/or decision is formally announced and onwards [Variables 13; 14; 21; 22; 27; 30].

The individual anticipating their own departure mean that they endeavor to obtain favorable references from their employer as they seek to work themselves out of one job and into another. Striving for receiving ideal references, maintaining pride in the work-role and self-esteem to perform reasonable well are factors that partially explain how workers react to the perceived threat of job-loss [Variables 27; 28; 29; 33].

In the closedown process, downturns in the productivity development are primarily due to the workers negative reactions to various types of information and actions from the management. The periods with increasing productivity are primarily associated with the workers increases in hope of continued production at the plant as well as the perceived benefits a HRM-program that sometimes come into practice during the closedown process, dependent of the managerial setting, as reported in the When the Lights Go Out paper [Variables 19; 34; 36].

In cases where management provides a Socially-Responsible (SR) managerial setting a HRM program is often provided, in order to support the workers throughout the closedown process. Initially, the HRM-program has a positive effect and dampening negative reactions. However, the HRM-program holds a temporal dimension, with a diminishing effect throughout the closedown process [Variables 19; 30; 36; 37; 38].

The temporal dimension of the HRM program comes into practice and workers are often given a payment incentive to maintain productivity on the levels, prior to the closedown decision. Initially, the payment incentive has got a positive effect on the workers as bonuses
are often put in relationship to the productivity development. As workers get used to a higher salary and other benefits such as job search aid and educations and on-job training programs, the positive effect of the HRM diminishes [Variables 36; 37; 38].

Empirically, based on the *When the Lights Go Out* paper, it has been evident that as with the temporal dimension of the HRM program, the perceived threat of job loss tends to increase the levels of individualization on behalf of diminished collective action. In other words, over time, the influences from the workers collective have a diminishing effect, as the closedown process cause an increased degree of individualization. That is, the individual have reduced use of the collective as the final moment of disconnection from the organization is closing in. During the closedown process the worker collective initially tends to become centered, whereas as it over time it has a diminished importance and individualization grow stronger [Variables 24; 25; 27; 33].

In cases where management provides a Non-Socially Responsible (Non-SR) managerial setting, no such HRM-program is provided. Empirically evident from the referred case studies, negative reactions among the workers are stronger in Non-SR cases (See the *Pyrrhic Victories – Anticipating the Closedown effect* paper). Nevertheless, the Closedown effect has been recorded in these settings as well as in the SR ones [Variables 19; 30].

### 4.4.2.6 Collective action

As a closedown decision is announced certain dynamics come into play. Collective actions and also manifestations that bring the worker collective together as a reaction to the announcement. In relation to the management and as the closedown decision is announced the alienation and distance between management and the workers tend to increase. Psychological responses to the threat of job loss with grief, anxiety, stress and arousal brings the workers together as there often is a need for collective comfort and handling of the prevalent situation (Brockner, *et al.*, 1988, 1987, 1986; Kübler-Ross, 1975, 1969) [Variables 28; 29; 34].

Collective manifestations bring the worker collective closer together. An anti-management view is often developed with the incentives of wanting to show that the closedown decision was wrong. In this spirit, workers occasionally and collectively agree to enhance effort. These
are examples of spontaneous collective actions that evolve as a consequence of the closedown decision [Variables 21; 30; 31; 32].

Management control over daily operations diminishes throughout the closedown process, providing operative space for the workers. Day-to-day management control also diminishes whereas workers often become self-organized. Management tend to be fully occupied with managing the closedown as such, including selling off equipment, relationship to external stakeholders such as media and authorities, why management tend to spend less time handling day-to-day management. With an absent formal management, informal leadership can evolve. That is, individuals who are not in a formal position of management but have a (or are given) confidence from the worker collective receives a position, informally [Variables 10; 11; 12; 20; 21; 24; 25].

Informal leaders often have an informal authority to distribute work among the workers and from the empirical evidence it is evident, as noted in the *When the Lights Go Out* essay, that informal leadership grows stronger throughout the closedown process, and is being legitimized by the workers and the worker collective [Variables 24; 25].

Even if formal management structure is being replaced by informal leadership, the worker collective more often apply a collective decision-making regarding how work should be conducted and on what level of efforts work should be pursued. Workers are often sensitive to management actions and information. This is a similar behavioral pattern as identified by Lysgaard (2001) and how small work groups spontaneously become organized and how management and workers “make-out”, but in an entirely different context (cf. Burawoy, 1979) [Variables 20; 24; 25; 27; 30].

When the level of conflicts rise and the speed of conflict resolution are slow, workers are less determined to enhance efforts, vis-à-vis when the conflict context is of low importance to the workers; they are more likely to be willing to enhance efforts and performance [Variables 13; 14].

The evolvement of informal leadership can, but does not have to support the alienation and distance between management and the workers and the reliance on internal hypotheses, prior expectations and the attention to dominant cues (cf. Shaw & Barrett-Power, 1997; Staw,
Sandelands & Dutton, 1981). Rather, with informal leadership comes spontaneous organizing within and among informal groups and enhanced employee motivation due to the newly achieved operative space and decreased levels of formalization [Variables 21; 24; 25; 28; 29; 34].

Similar to the evolvement of an informal leadership, workers also spontaneously organize themselves in groups that go beyond formally established work-teams. As the management interest decreased over time, the groups grew stronger in taking control over the day-to-day operations. This is similar to the previously argued innovative skills acquired through individual and collective experiences at work that can find operative space in an organization where there is scope for worker autonomy (Bergman & Wigblad, 1999; Sutton, 1987) [Variables 21; 22; 24; 25; 26; 27].

As noted in the When the Lights Go Out paper; the level of confidence (or trust) in management plays a significant role here. Throughout the closedown process, management control diminishes, whereas worker autonomy increases. Increased worker autonomy positively affects both employee motivation and work-design. With increased operative space, workers, as reported in the Pyrrhic Victories – Anticipating the Closedown effect paper, tend to initiate changes in work-design and conduct day-to-day rationalizations and develop innovative skills with enhanced employee motivation. These rationalizations are often conducted in collaboration with other members of the worker collective [Variables 20; 21; 22; 24; 25; 27; 33].

Similar to the evolvement of informal leadership, informal groups evolve and during the initial phases during the closedown play a significant role. Interpretations of management actions and decision-making is a consequence of not only the single individual worker interpretation but affected by the informal group behavior. Mutual expectations and strong norms for social conducts generate a generally accepted behavior through informal collective agreements (Burawoy, 1979; Bélanger, Edwards & Wright, 2003; Hoel & Bael, 2006; Hodson, 1991). Informal groups affect the individuals in different directions, intensifying and impairing the behavior, dependent of the situation and the actions and decision that are made. Informal groups influence the individual and determine the dominant level responses that were appropriate or inappropriate for performance [Variables 24; 25; 27].
The importance of informal groups holds a temporary dimension. Individualization grows stronger throughout the closedown process and incitements for employee motivation changes. That is, informal groups are prevalent and plays a significant role in the initial stages of the closedown process and to a major extent determine the dominant level responses are appropriate or inappropriate for performance. Consequently, individualization grows stronger; workers tend to rely on internal dispositions and reliance on internal hypothesis which contribute to the cause for their motivation (Staw, Sandelands & Dutton, 1981) [Variables 24; 25; 28; 29; 34].

4.4.2.7 Institutional reordering

Evident from the referred cases is the fact that the productivity tend to develop, following a ‘hockey-stick’-shaped pattern. Drawing upon the arguments from the A Holistic Approach to the Productivity Paradox paper; after the announcement of the closedown decision and during the advance notice period productivity tends to decrease, whereas during the countdown period productivity increase. Even if Figure 2 is schematic to the extent that the productivity development is illustrated as a linear trends and trajectories of previous trends, productivity fluctuates throughout the closedown process. Still, considering the aggregated trend analysis of the productivity development that there is an appearance of the Closedown effect in both the papers in this thesis, as well as in other research (e.g., Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Lewer, 2001, Sutton, 1987; Wigblad, 1998, 1995).
Prior the closedown decision, the organization has a given economic and institutional structure, which has a given productivity equilibrium. A closedown decision triggers an organizational change and knock-outs this equilibrium. As negotiations between management, the labor union and the workers are set (during the advance notice period) the downturn in the productivity is recovered. Evident from all of the papers in this thesis and from previous research, productivity increase stronger compared to the trajectory of the productivity development, pre the closedown decision, and a Closedown effect occurs (e.g., Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Lewer, 2001; Sutton, 1987). In the Pyrrhic Victories – Anticipating the Closedown effect paper it is also evident that when comparing four non-socially responsible closedown cases a statistically significant productivity increase effect is recorded, during the countdown period [Variable 1].

Certain structural dynamics come into play in a closedown process. In some cases a decision is made that a wear down strategy of the plant should be applied, with a minimum of proactive maintenance of the production equipment. This implies less interruptions and higher resource utilization. Contrary to the arguments by Ichniowski, Shaw and Prennushi (1997) there is no clear evidence in this case study, nor in previous research on closedowns that increased up-time and enhanced resource utilization fully (or to a large extent) explain the
appearance of the Closedown effect (Brown, Schmitt & Schonberger, 2004, Sutton, 1987). Rather, worker-initiated changes in a few cases in work-design partially contribute to increased productivity. Following of the increased autonomy, as previously argued, workers can conduct day-to-day rationalizations. On the structural level this implies changes in work-design, but rather seldom a (major) change in formal routines and processes [Variables 15; 16; 21; 23; 24].

With a diminished management and the development of informal leadership and informal groups, production planning become distributed to lower levels of hierarchy. Workers are able to plan the production that they find appropriate. In some of the cases changes has also been made in the product assortment and a production for stock, in order to handle a shift over from the closing production site to another remaining site (Pyrrhic Victories – Anticipating the Closedown effect paper; When the Lights Go Out paper) [Variables 17; 18; 20; 22; 23; 24].

In the A Holistic Approach to the Productivity Paradox paper, where it is noted that the given economic structure can in itself be viewed as a state that is altered, dynamically. The dynamics involved includes elaboration and restructuring by feedback loops connected to the interplay between the company management, its competitive environment and the rest of the institutional structure.
Figure 3 A dynamic model of economic and institutional change on the organizational level of analysis

Figure 3 is adapted from the *A Holistic Approach to the Productivity Paradox* paper.

The principal dynamics in Figure 3 is that the given institutional structure at time $t_1$ is seen as a temporary state of economic and labour-management relations based on past events. In the closedown case the $t_1$ is based on the “prenotice period” where top management is deciding on the timetable for the closedown. Management is in the closedown situation putting pressure towards restructuring for economic reasons, with the ambition of increasing profitability. This institutional structure $t_1$ is reordered by the feedback loops into new institutional structures $t_2, t_3, \ldots, t_n$. Applying this more precisely in the closedown situation the time point $t_1$ marks the public announcement of the decision to close down. The time between $t_1$ and $t_2$ is related to the advance notice period and the time elapsed between $t_2$ and $t_3$ is the countdown period. The structure of the system is thus viewed in terms of sets of alternative actions, associated with the components and the constraints that specify, or limit, these alternative actions. This model integrates institutional, managerial, group and individual levels of analysis and represents one possible pattern of explanation that can be in closedown contexts, as validated by the Fundia Steel Wire Rod case [Variable 1].
4.4.2.8 Institutional restrictions

There are some institutional restrictions to a closedown in terms of market, business and technical as well as legislative conditions. The market conditions often limit the possible speed with which a closedown can be carried out. Sometimes management is not sensitive to impair customer relations and depreciate the company’s reputation on the market, why a rapid exit from the market can be limited [Variables 3; 4; 5].

The technical conditions can limit the possible speed with which a closedown can be carried out. Complex production processes may require long Closedown periods to prevent disruptions, when both technical skills and tacit knowledge is prevalent, which are in the process to be relocated. This implies that for some business and/or industries the closedown period will be somewhat longer, due to the technical conditions. It should however be noted here that there are only weak evidence in the case studies that support this proposition [Variable 5].

A regulatory framework, stipulated by the legislation and other praxis determine the minimum run-down period and the relationship between management and the labor union. In international comparison, the encountered closedown cases in this thesis are considered as relatively long closedown periods compared to, for example, the eight cases presented by Sutton (1987). It is evident from the papers, and as argued above, that a typical pattern of the productivity evolve (See Figure 2). This implies that the Closedown effect occurs as negotiations are set and the closing organization enters the countdown period. From the papers and the literature it is evident that the Closedown effect is persistent throughout the countdown period [Variables 6; 7].
4.4.3 A critical reflection on the limitations of the pattern of explanations to the Closedown effect

This development of pattern of explanations makes a contribution to the closedown literature, since it synthesizes a range of observed data and theoretical issues into a comprehensive model. However, the outlined pattern of explanations has its limitations.

Firstly, given the scattered literature, and until there exist a more comprehensive set empirical data on closedowns, obtained using a wider range of mythological approaches, it is prudent to consider this pattern of explanations as tentative. Even if there is an analytical generalizibility to the results, previous research has been limited to which these results can be compared and put in relation to. A limited set of case studies advances the understanding of closedown processes. Still, more empirical research needs to be done in order to validate and enhance the trustworthiness of the results. The strategies of enhancing the trustworthiness of this research are elaborated on in chapter 3.4. Due to the fact and encountering a rather novel field within organizational science I here have to be careful on drawing too far-reaching conclusions and claims, why the outlined pattern of explanations should be considered as tentative.

Still, through the development of this tentative pattern of explanations a contribution is made to the closedown literature. Bringing together the results of the papers into an emergent pattern of explanations advances the understanding of the puzzling phenomenon of the Closedown effect. This emergent pattern of explanations can serve as a foundation and provides some direction for future research on closedowns (See chapter 6).

Secondly, there are limitations in the possibilities to determine the significance of how the different variables contribute to the productivity development over time. Rather, I am theorizing about the phenomenon and indicating possible interactions and dependencies, based on the outcomes and results of the papers. This is primarily a consequence of the applied methodologies. Case study research seldom provides a scope for determining the strength in relations in-between factors. It should however be noted here that by developing a pattern of explanations I do not have the intention here of determining the strength of relationships, rather providing an identification of critical factors for future research (See chapter 6).
Thirdly, since the literature on closedowns is being limited, scattered and fragmented there are limitations in the possibilities to relate to, and draw upon, existing literature. This is a primary explanation to the fact that some of the variables are not extensively analyzed, as little support can be found in the literature. However, by applying the method for data analysis as done in chapter 4.1, as of above, it is argued that analytical generalization can be made (See chapter 3.4).

Fourthly, a theoretical model is outlined in the *When the Lights Go Out* paper. This model is different from the pattern of explanations that is being outlined in this thesis. A question that might be raised in adherence to the pattern of explanations is why I outline two different models on the same phenomenon. It is argued that the model in the *When the Lights Go Out* paper is primarily based upon a single-case study, where attention has been given to a limited set of variables and conceptions. In the development of the pattern of explanations a wider set of variables and conceptions are taken into consideration, as outlined above.

As noted on the fairness to the data as well as the limitations in the possibility to determine the significance of how the different variables contribute to the productivity development over time, it becomes a highly complex, or maybe even impossible, issue to develop a similar model as the one in the *When the Lights Go Out* paper. Such cause-and-effect model is not possible to generate here. This as a cause-and-effect model in some aspects can be considered as too narrow and to not provide the possibility to outline a pattern of explanations. Rather in the discussion of the different variables I outline both their temporal dimension as well as, elaborate an analytical level how a variable affect other.
5 Practical implications of this work

Based on empirical data and the papers’ results, the practical implications of the papers are discussed in this section.

The general pattern of productivity development found in the cases studied is: shortly after the public announcement, and during the advanced notice period, productivity tends to decrease. Productivity recovers however during the Countdown period, and in several cases reaches all-time highs. Together with earlier theoretical and the empirical results, this implies that a Closedown effect can be anticipated during prolonged closedown periods This Closedown effect has been evident and statistically significant in the referred cases (Gislaved Tire Manufacturing, Gislaved Studding and Fundia Steel Wire Rod cases). From a management perspective, it is advisable to shorten the advance notice period. This generates reduced stress, anxiety and arousal among the workers, as well as a better offset for benefiting from the Closedown effect.

Anticipating a Closedown effect provides a basis for firms to revise their closedown process calculations. Currently management often make estimates that assume a productivity downturn during the closedown process. Such low productivity estimates lead to management decisions for short closedown timeframes. The predictability of a Closedown effect that is found in this thesis however indicates closedown timeframes can be significantly longer. Since the production phenomenon is socially embedded, prolonged closedown periods provide opportunities for both workers and management.

Rapid closedown can often cause severe disruption to production flows. When management initiate closedowns on one or more plants based on excess capacity within the corporation, there is often transfer of production equipment remaining production sites. Transfer is often characterized as problematic since complex technical skills and tacit knowledge are involved. This takes time. Market conditions often limit the possible closedown period. Sometimes management are insensitive to how closedowns and disruptions impair customer relations and depreciate the company’s reputation. Management can minimize such disruptions by
calculating for a prolonged closedown period, which buys time for planning, and carrying out transfers. This can decrease the risk of losing market share.

When the closing plant is not geographically co-located with corporate headquarters, there is often a conflict between the local and corporate management. Local management who have to implement the closedown often feel the closedown is wrong (e.g. Gusab case). Local management may be prisoners of corporate management and local actors, such as workers and their labor unions. Closedown management is a demanding task that needs to be carried out in a short time frame.

Workers psychological responses are affected by how management handles information to their particular local organization. So, management’s actions and behavior have a direct relationship to how the productivity develops and workers’ emotional setting. It is likely that socially responsible management practices will cushion workers’ emotional and behavioral responses. Indeed, the Gusab case showed the retrenchment program worked as a shock absorber to the closedown decision. In non-socially responsible settings, there are more conflicts and speed of conflict resolution slower, which lead to reduced productivity. Even if the Closedown effect occurs in both SR and Non-SR settings, a socially responsible approach is advocated to reduce workers’ perceived degree of threat and fear, which can be an argument for labor unions. From a societal perspective one can also argue for prolonged closedown periods as the local community (or the government) can find operative space to create new jobs and/or replacement industries. These arguments can be used together with arguments about productivity and transfer opportunities, to sway top management’s views – particularly when they are skeptical about productivity effects (Bergman & Wigblad, 1999).
6 Future research possibilities

Since a new logic about closedown management arises from this thesis work, this chapter assesses methodological, theoretical as well as empirical considerations that would potentially be of benefit for future closedown research.

6.1 Methodological considerations

Burrell and Morgan (1979) notions of sociological paradigms and fields of research, characterize the majority of the previous closedown research as primarily functionalistic. Their theoretical constructions, and the approach of the early phases this thesis, can be seen as reductionistic and aim at providing an explanatory logic of cause and effects. However, the A Holistic Approach to the Productivity Paradox paper goes beyond this reductionistic cause-effect approach and follows a holistic logic, with the ambition to understand the dynamics in closedown processes. It is nonetheless still within the functionalistic paradigm.

An interpretive perspective would be an interesting brake with this functionalistic logic since the two paradigms have different clusters of assumptions. Many methodological considerations can be made in order to apply an interpretive perspective on research on closedowns (cf. Burrell & Morgan, 1979). An interpretive projection could imply the need of a different perspective from which the phenomenon of closedowns is studied. An example of such perspective is the actor’s perspective. A starting point here could be to apply different meta-theories in order to create general starting points for the function of the human consciousness and the reality’s social construction (cf. Arbnor & Bjerke, 1994: 74).

The actor’s perspective holds an assumption of a socially constructed reality (e.g., Argyris, 1990, 1985). This implies that the language of description can serve as an experience material for further development of knowledge. To understand actor’s interpretation of the contexts, a future possibility is to incorporate a description of mutual interaction relationships. This could also enable a search for how different interpretations and factors mutually, and in constant transformation, affect each other in an ongoing process of development.
This could be interesting as one of the purposes of the actor’s perspective is to uncover general factors of constitutions. The inner character refers to make the actors understand their own situation better, one type of freeing understanding (cf. Arbnor & Bjerke, 1994: 75). The outer character refers to a creative understanding, which implies the active role of the research, responsible for its actions. By applying an action research perspective, the researcher tries to affect the process (and maybe the outcome) of the closedown process. However, this might be hard or even impossible to conduct, as the closedown to some extent is a determinant process - management has made a decision and the organization is forced to closedown.

Another interpretive approach to research on closedowns could be an inductive-ethnographic method. This is quite close to, but not the same as, the process based case study that I conducted at Gusab Stainless. As noted, I spent considerable time in the organization in order to capture the closedown process. By applying an ethnographic research method, the researcher would go even deeper into understanding the “life in the organization” and the “life of the actor’s”.

The ethnographic method implies research including observations of actions and events in natural contexts and admits the mutual interdependence of theory and the empirical field. A research problem may be that the closedown process could be too short for ethnographic studies, which require considerable observation time in the context. The researcher would also need in-depth knowledge about the actual context the ethnographic method is applied within. Furthermore, since the ethnographic method normally maps quite broad segments, there will be a need for the researcher to carefully consider the research’s delimitations. Delimitations include the vast body of data, both quantity and quality, and data interpretation. The ethnographic method consist of a broad setting of different techniques such as observations, studies of artifacts, different types of interviews with key-figures and these methods/techniques can be triangulated. The ethnographic method can serve as a relevant base for interpretive research and can create much depth on providing a better understanding or explaining closedowns.
6.1.1 Multiple case studies vs. surveys

A concern of this work has been the limited, scattered and fragmented framework of analysis and theory on closedowns. The empirical data comprises single or multiple case studies. To receive statistically valid data for analysis and creation of possibilities of generalizations, I therefore strongly encourage surveys. These could use the conceptions developed in this work.

To manage an extensive survey on closedowns, it is suggested that a survey could be made directly after the closedown decision is made, with follow up survey made at specified intervals during the closedown process. If this were possible, the researcher would get opportunities of analyzing prospective data and development over time.

Studies on downsizing and on decline have also used surveys, e.g. measurements of survivor syndrome and individual’s reactions to a downsizing (cf. Dawkins, et al., 1999). Such measurements could be adapted to capture the closedown victims’ reactions to the closedown process. Additional measurements are however needed for capturing attitudes towards, for example, the information processing of the operators, relations to management and the workers collective. Examples of such measures can be (Dawkins, et al., 1999):

- Employee morale (decreased levels)
- Employee motivation (decreased levels)
- Employee commitment to the organization (decreased levels)
- Employee job satisfaction (decreased levels)
- Concern about job insecurity (increased levels)

A challenge in survey measurements however are individual survey respondents may not have productivity measurements. If there is an interest in tracking productivity development, researchers would probably need to collect productivity statistics in another way.

Since previous research has focused on blue-collar workers, it would also be relevant to survey white-collar workers and track their productivity development. This would require development of suitable productivity measures. Such work would test the validity of the Closedown effect.
Survey researchers are likely to encounter some methodological challenges. *Firstly,* since closedowns do not necessarily occur simultaneously, collecting data may be problematic and data is likely to be sampled at different times. *Secondly,* to go beyond manufacturing industry, different industries and sectors could to be considered. *Thirdly,* productivity measures may need to be standardized in order to allow comparisons among organizations, industries and sectors to be made.

Recently Brown, Schmitt and Schonberger (2004) reported a longitudinal study of a plant closure, focusing on employee responses and performance. They also concludes quality, productivity and customer satisfaction remained strongly positive. These authors combine different research methods such as interviews, observations, achieve data analysis and a survey. Following the authors suggestion on the variables applied in the survey it would be relevant in further research to extend such research in order to validate both the measures as well as the results. In short, potential variables for exploration can be:

- Job satisfaction (somewhat similar to Dawkins, *et al.*, 1999)
- Climate of Trust
- Communication Scales
  - Operations communication
  - Informational justice
- Perceived Work Unit Performance
- Perceived Job Prospects
- Creativity Culture
- Work Load

As proposed by Brown, Schmitt and Schonberger (2004) these variables should be considered separately, as well as in an aggregated view. These variables can for that reason serve as a foundation and as components of such a survey. These components have foremost been used in research on downsizing. Still, they have to be explored and theoretically adjusted to fit the closedown context.
6.2 Theoretical considerations

Since researchers have a diverse range of theoretical possibilities, the intent of this section is to provide a starting-point for a critical assessment of theory.

6.2.1 Downsizing literature

When considering the conceptualization on different phases during a closedown process, it can be of relevance for future research to focus a discussion on the applicability of different streams of literatures for analysis.

A proposition for future research is that during the advance notice period, downsizing literature should be taken into account. That is, during this period performance development tends to be negative (See Figure 2). Hypothetically, during this phase of the closedown workers may have similar psychological reactions to those indicated in downsizing. In particular, the concept of the survivor syndrome can be empirically extended and its validity tested during the advance notice period in a closedown context. Uncertainty about the future, and ambiguity, during the advance notice period are the reason for this hypothetical suggestion. However, from an employee perspective, this uncertainty and fear of job loss transmogifies (Watterson, 1989: 49ff) into job loss certainty during the countdown period. So, while the downsizing literature may not be fully applicable for the entire closedown period, it may enable a fine tune analysis of psychological reactions during the advance notice period.

Careful consideration of demarcations closure and downsizing should nonetheless be maintained while adopting appropriate concepts and measures from the downsizing literature. Therefore, researchers that have the ambition to encounter this approach also need to take into account the demarcations as outline in the above mentioned paper.
6.2.2 Motivational theory

In one part of my recent work (Hansson, 2007) I have identified an example of the potential of motivational theory for analyzing closedowns. In business organizations the primary goal is economic productivity (e.g., Deutsch 1985, 1975). Equity – rather than equality or need – is therefore likely to be the salient norm. This norm may not be applicable in closedown contexts, as conditions are altered. The perception of inequity is prevalent among the subjects within a closedown context (Bergman & Wigblad, 1999; Sutton, 1987). It is assumed that analyzing closedowns from an equity theory perspective can provide complementary explanations to the Closedown effect. Through an extensive literature review it is evident that previous research on closedown has not thoroughly examined this perspective and so literature on equity theory may contribute to the current analysis (Adams, 1965, 1963; Brockner, et al., 1986b; Yamaguchi, 2003).

Equity theory has been shown to hold validity in practice and is concerned with distribution based on individual inputs (cf. Goodman and Friedman, 1971). Some interpretations of equity relate to rules and systems designed to discover differences between individuals in terms of their potential and actual contribution and to distribute rewards according to input (Deutsch, 1985; Pateman, 1981). Four propositions capture the objectives of the theory (Huseman, Hatfield & Miles, 1987, 1994):

1. Individuals evaluate their relationships with others (e.g., their employers) by assessing the ratio of the outcomes they receive in the given relationship to their inputs, compared to the outcome/input ratios of other relationships.
2. This comparison other may be a co-worker, a peer working for another employer, a collective other such as composite standard based on peers or the industry average, the employer as a whole, oneself in another social role such as a previous job, or some type of internal standard.
3. If the received outcome/input ratios of given relationship and the comparison are perceived to be unequal then inequity exists.
4. This inequity causes tension – frustration of under-reward or guilt of over-reward.
So, equity theory proposes that when individuals feel inequitably rewarded, internal tension occurs and individuals will be motivated to take action to restore equity, thereby relieving the tension (Huseman, Hatfield & Miles, 1987, 1994). This is based on the statement of rewards and treatment of others also influence and individual’s level of satisfaction as people appear to be motivated to receive what they consider an equitable return for their efforts (Brooks, 2003: 65).

Much of the previous research on equity theory in individual and organizational psychology has evaluated the effects of positive inequity on workers reactions (Mowday, Porter & Steers, 1982, Steers, Mowday & Shapiro, 2004). Positive inequity refers to workers’ perceiving that the ratio between outcome and input is higher for them than it is for relevant others. Two basic notions in equity theory are that positive inequity (1) arouses guilt and (2) motivates individuals to project this guilt through behavioral or psychological means (Brockner et al., 1986b). Adams (1965) and others has shown that positive inequity many cause employees to work harder, presumably in order to redress the perception that they are taking advantage of their employers.

Brockner, Davy and Carter (1985) tested the hypothesis that the dismissal of a co-worker could cause survivors to experience guilt produced by positive inequity that in turn would lead to improvement in subsequent work performance. Identified dependent variables have been (1.) the subject’s perception of how fairly they and their colleague have been treated, (2.) their guilt, and (3.) their work performance, as indicated by the quantity of the productions and quality of their efforts.

Equity theory predicts that the merit layoff condition should have less effect on workers’ subsequent performance than will the random layoff condition. More specifically, subject in the merit layoff condition may restore equity psychologically, by perceiving that their better performance or greater input justified their status as survivor (Brockner et al., 1986b) – and in the case of organization closedown, their status throughout the closedown process. Consequently these individuals have less need to redress the inequity behaviorally through such means as increased work performance.

Making the same assumption as Brockner et al., 1986b) indicating that at the outset, it is implied that guilt produces a positive inequity and reaction that employees may have to co-
workers layoffs. That is, during the closedown process, there is a subsequent downsizing towards the final closure as employees leaves the organization. However, in closing organization it is likely that employees might be worried or anxious about the uncertain future and the ambiguous present, especially if they perceive that the layoffs are illegitimate.

Equity theory represents an example of motivational theories that can be applied and tested in closedown contexts. An aspect that should be taken into consideration here is that there is a need for modifying the theoretical test to the context. This as there is little understanding on psychological reactions and workers behavior during closedown processes, there is a need for taking into account theories that can enable analyzes of this aspect in closedown contexts.

Motivational theory can be potent as an analytical tool for analyzing reactions and actions of the workers during a closedown process. Previous research on closedowns has been limited to the extent that is has not taken into account motivational theories, why future research would benefit from doing so. From this thesis it has been argued that the Closedown effect is primarily a human driven productivity increase effect. For that reason it is of interest to put more attention to this in future research.

Within the downsizing literature much attention has been given to motivational theories as well as psychological theories on job loss (Brockner et al., 1986a, b, 1987, 1988a, b). Downsizing literature can be seen as adjacent to closedown literature, why inspiration can be gained from that stream of literature. By applying the same type of measures and theoretical conceptions as from the downsizing literature, further a better understanding can be gained on the similarities and differences between downsizing and closedown contexts. It is evident that the progression of literature on downsizing has been stronger than the literature on closedowns. As argued there are several similarities between both research areas and it would be relevant to adopt theoretical conceptions from the downsizing literature in order to improve the research on closedowns.
6.2.3 Small-group theory

This thesis finds the various collective actions that evolve during the closedown process are important in dynamic development. The details of these group dynamics have yet to be studied in depth by the closedown literature. So, small-group theory can be of importance for a better understanding or explaining such behavior. Lysgaard (2001) discussed the dynamics of the worker collective and relations to management. In particularly it would be of interest to assess how workers spontaneously organize under extreme conditions and the effect this has on productivity.

In the sociology of informal groups, an informal and spontaneous organization, based on mutual expectations and strong norms for social conduct and the generally accepted behavior, relationships are formed (Bélanger, Edwards & Wright, 2003; Hodson, 1991; Hoel & Bael, 2006). That is, informal groups can affect the individuals in different directions, intensifying or impairing the behavior, dependent on the situation and the actions and decision that are made. Informal group influences the individual and often determines whenever dominant level responses are appropriate or inappropriate for performance. Still the understanding of such dynamics is limited in closedown contexts and so there is a need for further analysis of this.

6.2.4 Management accounting

Downsizing activities are commonplace, and are based on economic arguments. Yet, research that focuses on the role(s) management accounting system in these situations is limited. One exception is Radcliffé et al., (2001). His field study claims management accounting is important to visualize shortages and to enable comparison between organizational units and alternatives. From the literature review of this thesis, it has not been evident that anyone has studied how management accounting is applied (or not applied) throughout downsizing and closedown processes. Instead, focus has primarily been associated with different consequence of restructuring events. This distinction could be of importance for the following reasons:

Research indicates downsizing and closedown situations can be significantly different to ordinary management and control of operations. While restructuring events can be seen as
everyday activities for headquarters in large organizations, the affected units or categories of employees are unlikely to share that view.

Downsizing research findings include decreased productivity, reduced efforts among employees and increased propensity to leave the organization (Brockner et al., 1992, 1988a, b, 1987, 1986a, b, 1985). From this, it can be argued that downsizing situations elucidate and strengthens the political dimension in the organization (Hardy, 1990, 1987). This can take the expression in increased/changed conflict of interest between employees and employer, and also within and between groups of employees.

Since economical arguments, and their pros and cons, are a rhetorically feature of restructuring contexts (Cascio, et al., 1997, 1993, 1991; Sparrow & Hiltrop, 1994), it would be of interest to research accounting methods, the type of accounting information that is used and not used by different actors during the various phases of corporate downsizing.
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The Swedish Research School of Management and Information Technology (MIT) is one of 16 national research schools supported by the Swedish Government. MIT is jointly operated by the following institutions: Blekinge Institute of Technology, Gotland University College, IT University of Göteborg, Jönköping International Business School, Karlstad University, Linköping University, Lund University, Mälardalen University, Växjö University, Örebro University and Uppsala University, host to the research school. At the Swedish Research School of Management and Information Technology (MIT), research is conducted, and doctoral education provided, in three fields: management information systems, business administration, and informatics.

**Doctoral theses (2003- )**


5. **Frimanson, Lars (2006)** *Management Accounting and Business Relationships from a Supplier Perspective*, Department of Business Studies, Uppsala University, Doctoral Thesis No. 119.


**Licentiate theses (2004- )**


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The list below outlines a set of songs that can serve as recommended listen when reading this thesis. The order of the songs is purposefully outlined for the denoting theme of this thesis.

**Factory**  
Darkness on the Edge of Town

**When the Lights Go Out**  
Tracks

**Youngstown**  
The Ghost of Tom Joad

**Adam Raised a Cain**  
Darkness on the Edge of Town

**Darkness on the Edge of Town**  
Darkness on the Edge of Town

**This Hard Land**  
Tracks

**Devils and Dust**  
Devils and Dust

**The Price You Pay**  
The River

**When You’re Alone**  
Tunnel of Love

**My Best was Never Good Enough**  
The Ghost of Tom Joad

**If I Should Fall Behind**  
Lucky Town

**Lost in the Flood**  
Greetings from Asbury Park

**Reason to Believe**  
Nebraska

**The Rising**  
The Rising

**Further On (Up the Road)**  
The Rising

All songs are written and performed by Bruce Springsteen. To each song a note has been made on the album that the song occurs. In or most cases the songs can also be found on various bootlegs or live albums. Here I primarily refer to studio recorded and official albums.

2 Throughout this thesis the term closedown will be used. The term is not singularly demarcated to concern only closure of an organization or plant but also include closures of facilities. This as closure can occur under varying contexts. First, and most simply, the closure can be a single facility (plant, office or R&D facility) closure linked to the demise of the company. However, many closures are multi-facility closures. Closures can occur on different levels of restructuring; corporate, business, assets and routine levels, even if the majority of existing research has neglected to frame both the level of analysis as well as the level of restructuring.

3 A detailed description of the contribution from each of the papers is presented in Contributions from this thesis.

4 As Sutton (1987) notes; “As with all metaphors the use of the term “organizational death” in this research is technically a mistake, because it treats biological death and organizational death as if they were identical. When a biological system dies, so do all of its components (except in rare cases such organ transplants). This is not true for organizations, which have human members”. Nonetheless, using the metaphor “organizational death” conveys that I study permanent closings, which are most akin to biological deaths, and that, although social systems are not restrained by the temporal limits of biological life cycles; death is an expected occurrence in all- organizational population. Following the metaphor of organizations as if they where organisms (c.f. Morgan, 1986, p. 39ff.), they undergo a metamorphosis (e.g. due to mutations and other stimuli) and eventually their existence seize to exist. “The death metaphor also best expresses how individuals experience this transition. A defunct organization is often a great loss to displaced members similar to the loss of a friend or relative (Harris & Sutton, 1986).” The death metaphor implies a closed system approach (cf. Scott, 2003) and is for that reason not fully applicable for the view of the closedown process in this thesis as I have a point of departure from an open systems approach.

5 An organizational closedown can be considered as an organizational death (Sutton, 1987). When faced with adversity, many people develop and maintain positive illusions regarding themselves and their ability to control their environment (Taylor & Brown, 1988). A person might acknowledge the inevitability of his or her precarious situation and can be overly hopeful of a miraculous cure (Epstein, 1980). Death is often seen at a safe distance in the future. Still, awareness of death threatens a person, who then protects himself or herself by denial and defenses. The searching for meaning during the process of death is often associated with a person’s perceptions, values and beliefs (Frankl, 1963). From a philosophical perspective Heidegger (1962) claims that death is the foundation of one’s freedom. This statement serves as a tentative metaphor for the individuals in a closing organization as they often experience increased operative space and diminished operations management, which can be seen as a type of freedom they might not have experienced prior the closedown decision, even if this is not what Heidegger (1962) actually meant I here rather apply Heidegger (1962) metaphorically. Further, Heidegger (1962) literally discusses physical death of the human being. This is however (and hopefully) not the case nor the consequence in organizational closedowns and organizational deaths, even if suicides and psychological traumas have been reported as a consequence of organizational death (c.f. Harris & Sutton, 1986). Still the death metaphor can be seen as close to the Social Darwinist view, which is neither the starting point nor the perspective of this thesis. Rather, this note is a reflection on one part of the debate and discussion that has been going on, on organizational closedowns.

6 The third paper, Pyrrhic Victories – Anticipating the Closedown effect, was actually published before the When the Lights Go Out paper. Nonetheless, it is reported here as the third paper as it benefited from the experience of the literature review and analysis that was published in the second paper.
An earlier version of the paper was presented at Nordisk Företagsekonomisk Förenings (NFF) conference in Reykjavik, Iceland, August, 2003 under the title “Reframing the Hawthorne effect”. An earlier version of this paper was included in my licentiate thesis under the reference Hansson, M. (2005). From Dusk Till Dawn: Three Essays on Organizational Closedown, Department of Economics, Statistics and Informatics (ESI). Örebro University, Licentiate Thesis No. 3.

The paper When the Lights Go Out was awarded the best paper award in the Organizational Behavior (OB) track at the European Academy of Management conference, St. Andrews, Scotland, 2004, and nominated to best paper of the conference. An earlier version of this paper was included in my licentiate thesis under the reference Hansson, M. (2005). From Dusk Till Dawn: Three Essays on Organizational Closedown, Department of Economics, Statistics and Informatics (ESI). Örebro University, Licentiate Thesis No. 3.

An earlier version of the paper was presented at European Academy of Management (EURAM) conference in Munich, Germany, May, 2005. An earlier version of this paper was included in my licentiate thesis under the reference Hansson, M. (2005). From Dusk Till Dawn: Three Essays on Organizational Closedown, Department of Economics, Statistics and Informatics (ESI). Örebro University, Licentiate Thesis No. 3.


This part of the table refers to the explorative approach, as outlined in chapter: 3.1 My explorative research journey.

In the search I have altered, combined and truncated some of the words that can be spelled differently such as the searches when I have used the term closedown. I have not only used “closedown” but also close-down and close down, as there might be different ways of using the specific term, dependent on the researcher/authors use of language.
Recontextualizing the Hawthorne effect

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Abstract

In this paper, we explore the thesis that a threat to the vital interests of an entity, be it a single individual or a group, will lead to productivity increases in a variety of forms. We argue that because threat was present in the Hawthorne experiments, the adoption of a decline perspective is relevant to a recontextualization of the Hawthorne effect. This means introducing aspects of an open systems approach into the analysis. A comparison between the Hawthorne effect and the Closedown and Horndal effects reveals certain analytical similarities. In view of this, and because the threat factor is present in the Hawthorne experiments, we recommend that threat be taken into account as one component of the Hawthorne effect.

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Keywords: Closedown effect; Hawthorne effect; Horndal effect; Productivity; Threat; Decline

1. Introduction

The Hawthorne experiments serve as a paradigmatic foundation for the study of work within the social sciences. The experiments have been constantly reconsidered in the light of contemporary disciplinary debates and earlier conclusions have been questioned (Gillespie, 1991, p. 4). The insights gleaned from the experiments provide a basis for most current studies in human relations as well as in sub-areas such as participation, organizational development, leadership, motivation and even organizational design (Franke & Kaul, 1978). The Hawthorne studies have also acquired added importance as

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field experiments have been increasingly emphasized as an alternative to laboratory experiments (Adair, 1984, p. 335).

The researchers engaged in the Hawthorne experiments discovered a productivity-increase effect, later to be labeled the Hawthorne effect. The Hawthorne experiments also included an extensive interview program for examining the development of social relations (Roethlisberger & Dickson, 1939, p. 409ff; Rose, 1975, p. 141).

Throughout the period of the experiments, the operators were exposed to an underlying threat—often neglected in subsequent reports but mentioned by Gillespie (1991)—that unless the results met the expectations of the researchers, the whole undertaking would be terminated prematurely. The operators were given daily information regarding output and were told when they had performed poorly (Roethlisberger & Dickson, 1939, p. 38ff). Any failure on the part of the operators to increase production was taken as an indication of their unwillingness to cooperate with the experiment and they were duly corrected by the senior managers (Gillespie, 1991, p. 64ff). For various reasons—poor performance, operator attitudes towards the test leaders, and conflicts between operators and leaders—two operators were removed and replaced by two others (Roethlisberger & Dickson, 1939, p. 60ff). On several occasions, operators were told that lunches and other breaks would be discontinued unless production and cooperation improved. Nor were they allowed to talk to each other at work. Although the operators were participating in the experiments, they perceived the situation as threatening and conflict-ridden, due to the internal rivalry in the groups and the constant changes in the working conditions (e.g. Roethlisberger & Dickson, 1939, p. 72ff). Threats were not made explicitly by the test leaders in the Hawthorne experiments, but an underlying threat was constantly present (Gillespie, 1991, p. 61). Since threatening situations are often a feature of declining organizations, we argue that consideration of the literature of organizational decline is relevant in this context.

According to the downsizing model in Greenhalgh and Rosenblatt (1984), reactions to job insecurity include a decrease in efforts, a greater propensity to leave the organization and resistance to change, drops in productivity and reduced adaptability. The Hawthorne experiments, on the contrary, showed increasing efforts, a lower propensity to quit, readiness to change, and a rise in productivity and adaptability (Gillespie, 1991). A question that then arises is whether the logic of decline, with its underlying threat of termination, comes into the experimental effect as an important factor in explaining productivity increases under extreme conditions.

We take this question as our starting-point and will explore its plausibility below. There are several commentaries on the Hawthorne experiment results that fail to examine this point (e.g. Bramel & Friend, 1981; Cartwright, 1965; Collins, 1946; Dalton, 1950; Fiedler, 1964; Franke & Kaul, 1978; Hart, 1943; Pitcher, 1981; Scheuer, 2000; Sonnenfeld, 1985; Wardell, 1979; Warner & Low, 1947; White & Lippit, 1953). We argue that the claim put forward in Gillespie (1991) cannot be refuted without a recontextualization of the Hawthorne studies.

We restrict the present study to a focus on the experimental effect, i.e. the productivity-increase effect known as the Hawthorne effect, as primarily observed in the Relay Assembly Test Room and the Mica Splitting Test Room. We do not take up the extensive survey of the employees or the Bank Wiring Room study, which were carried out and analyzed by Roethlisberger and Dickson (1939, p. 409ff). Our present hypothesis is that in extreme situations, where the threat of termination is present as in the Hawthorne experiments, productivity-increase effects frequently appear. The Hawthorne experiments
were regarded as controlled experiments, involving a closed systems approach (cf. Scott, 2003), and excluding any exogenous explanatory variables. For this reason, and because threat was a prevailing factor in these experiments, we adopt a decline perspective as being relevant to a recontextualization of the Hawthorne effect, since the greater part of the decline literature adopts morphogenetic and open systems approaches (cf. Buckley, 1967; Scott, 2003).

The purpose of the present paper is to recontextualize the Hawthorne effect in an organizational decline perspective, with a view to extending our knowledge of productivity development under extreme conditions such as organizational closedowns or other threatening situations.

We undertake a recontextualization of the Hawthorne experiments in order to complement current perspectives of the Hawthorne effect, based on a closed systems assumption. The closed system perspective is thus expanded into a larger open system view. The result of this shift in perspective suggests the possibility of an additional and to some extent contrary interpretation relative to the classical view of the Hawthorne experimental effect. On a more general level, this article also represents a contribution to the emerging literature on organizational decline.

The article is organized as follows. We first provide a brief background to the Hawthorne experiments, and establish a link with the decline perspective. We then identify two productivity-increase effects of organizational decline that serve as the foundation for the subsequent recontextualization. We then compare the idea of Hawthorne studies as laboratory experiments with the idea of an underlying threat that makes it plausible to recontextualize the Hawthorne events as real-world observations. After this we introduce our methodological considerations, and proceed to a review of some of the previous research on the Hawthorne experiments. We revisit both Mayo (1933) and Roethlisberger and Dickson (1939) in order to conduct our recontextualization. We then offer an analytical–critical review and further analysis, drawing some conclusions and, finally, discussing the theoretical implications.

2. On the Hawthorne experiments

The Hawthorne experiments focused on exploring the relationship between worker productivity and the illumination of the workplace. Productivity will be represented as a measure of output per worker over a specific period. It was observed that productivity increased continually throughout the experiment, irrespective of the illumination levels. Consequently the initial experiments developed to become a series of attempts to explain why output increased (Mayo, 1933). By the way of experimental monitoring and control, the Hawthorne experiment purported to isolate factors affecting productivity and worker satisfaction.

The participants in the experiments were placed in different test rooms, where productivity, working conditions, health and social interactions were carefully recorded. In one of the test rooms, workers had an active role, trying to influence the experimenters by altering working conditions in the room. Although they were anxious to produce at a level that would ensure the continuation of the test and so maintain their earnings, they never sought to maximize output (Gillespie, 1991).

Informal status hierarchies and leadership patterns developed, challenging the formal systems designed by managers (Roethlisberger & Dickson, 1939, p. 379ff). At the social
psychological level, the researchers in the Hawthorne studies demonstrated a more complex model of worker motivation, based on a social psychological rather than an economic conception of the individual. On a structural level, the studies revealed and demonstrated the importance of informal organization (Gillespie, 1991).

Nevertheless, the workers’ attitude towards their work was more important than the changes in their working conditions. It was proposed by the researchers that a major impact from social and/or psychological variables contributed to the phenomenon that was later referred to as the *Hawthorne effect*, a productivity-increase effect (Adair, 1984).

The continuous increase in productivity irrespective of alterations in conditions such as working hours, illumination or rests surprised the researchers. On the other hand, retrospective interviews showed that the payment scheme was one dominant driving force behind performance (Greenwood, Bolton, & Greenwood, 1983). For the most part, the confusion was due to the studies themselves. The researchers claimed to be dealing with a controlled environmental setting. Nonetheless, there were so many uncontrolled variables that it became impossible to identify any causal relationships (Adair, 1984).

The Hawthorne experiments were relevant to interpretation based on a closed system approach, given the scientific knowledge of that time. Action experiments, on the other hand, are allied to an open system approach closer to modern theoretical knowledge. In a survey of the classical literature on organizations, Scott (2003) clearly shows how the open system models began to appear from 1960 onwards, increasing in frequency after 1970 and up to the present day.

The knowledge we acquired from recent research has allowed us to view the Hawthorne experiments in a new perspective—one that opens up the environment to which the experiments actually belonged. Several researchers have noted that the experiment was conducted during the period of world economic crisis that started in 1929 (cf. Braverman, 1974; Rose, 1975). The participants in the Hawthorne experiments were well aware of this external situation and felt themselves to be protected from it so long as the experiment continued. When it came to an end, they faced a relative increase in insecurity. And it was this relative change, so important to the workers’ reactions, that affected productivity levels.

Although the operators feared the depression, there is no evidence that their level of production would have affected their fate. Nor is there any evidence that they tried to earn more to compensate for the lost income of unemployed family members (Gillespie, 1991, p. 81f). Gillespie (1991, p. 62) claims: “the depression could have had an effect, not because the workers faced the threat of being laid off if they did not produce faster, but because they were able to ameliorate the effect of steadily declining hours on weekly income by working harder.”

3. An organizational decline perspective

Research focusing on decline and company closedowns has hitherto been limited, although it started to emerge during the 1960s. Early findings found that the elderly, women, workers without education and disabled workers were hit hard by closedowns (e.g. Gonäss, 1991). Further studies during the 1970s were based on in-depth case studies that threw light on the psychological trauma experienced by individuals in periods of decline (e.g. Beynon, 1978; Bosanquet, 1979; Carpenter, 1982; Fox, 1973; Loasby, 1973). In 1988, the first anthology with comprehensive contributions on organizational decline was
published (Cameron, Sutton, & Whetten, 1988). Since then our knowledge of organizational decline has increased substantially, and relevant definitions of many core concepts have emerged.

Today, with this new knowledge regarding decline, it is possible to present a more accurate picture of the Hawthorne effect than earlier interpretation allowed, although what emerges is still a somewhat fragmented picture of perceptions and theoretical starting-points. The idea behind many decline studies has been to create thick empirical descriptions and accompanying analyses.

There are some pictures of organizational decline that dominate. One of the most powerful is derived from classical economic theory: Inefficient and declining firms will be the first to receive punishing signals from the market (Boswell, 1972). Another picture of decline builds on causes of environmental and/or organizational change that reduce the adaptive ability to the micro-niche of the industry, and on the resulting reduction of resources within the organization (cf. Cameron et al., 1988).

The individual perspective is predominant, since it is the individuals who create the effects on productivity. But for these individuals there is also a negative aspect, as they risk losing their occupations even though the workers’ collective is still operating. In several of the organizations studied a strong worker collective emerged, jointly deciding on action and acquiring an operative space in the organization with scope for worker autonomy (Bergman & Wigblad, 1999).

3.1. Productivity development during extreme conditions such as an organizational closedown

In the literature on organizational decline we focus on documented effects of decline involving increases in productivity without investment, i.e. the increase in productivity is motivation-related. Exactly this was the main discovery connected with the Hawthorne effect. We chose the two effects known as the Horndal and Closedown effects, since these are both effects of productivity increases during a process of decline, thus lending themselves to comparison with the Hawthorne effect in exploring the impact of decline.

The Horndal and Closedown effects are both effects of an increase in productivity, reflecting the effectiveness of an organization. Organizational closedowns generate dysfunctional behavior and have consequences on both the individual and the organizational levels. In the case of the Horndal and Closedown effects, it has been noted that information becomes limited and decision-making sometimes tends to be centralized. On the other hand, there is usually little formalization of routines. Nonetheless, an increase in conservatism on the part of management and limitations on the long-term planning has both been observed in such contexts.¹

Increases in productivity in declining organizations have been documented, and in several cases the managers of closing factories have been surprised by higher productivity during the closedown period, compared with previous periods of “normal” operations

¹There has been a considerable development in the literature on multiplant closures and productivity effects in the remaining organization (e.g. Becker & Huselid, 1998; Chang & Singh, 1999; Datta, Guthrie, & Wright, 2003; Kirkham, Richbell, & Watts, 1999). On the sector and industry levels, a body of literature has also emerged been provided on plant closures and productivity effects (e.g. Colombo & Delmastro, 2001; Guthrie, 2001; Ichinowski, Shaw, & Prennushi, 1997; MacDuffie, 1995; Zatzick & Iverson, 2004). The literature on single plant closures remains limited, but can still be taken as our starting point for the recontextualization.
Bergman & Wigblad, 1999). We have defined our decline perspective to include such extreme conditions of decline as the threat and/or the actual presence of closedown.

During periods of closedown and decline, managements usually lose interest in future plans for the declining organization. They do not see investment as an option. They are usually economically constrained and no capital investments are made. This situation diverges somewhat from that of the early Hawthorne experiments, when a minor adjustment was made in production equipment. Management did have plans for the organization, as manifest in the set-up for the experiments, but they did not make any productivity-increasing investments. However, during the later phases of the Hawthorne experiments, management control did reveal a tendency to slacken (Gillespie, 1991). But there is still a connection between the three situations, in that no capital investments were made.

In closedown contexts threat is all-prevailing, since the closedown hits not only the single individual but also the organization as a whole. The threat becomes manifest as the members of the organization lose their occupations (Bergman & Wigblad, 1999; Wigblad, 1995). As noted above, although there was no outspoken or manifest threat hanging over the Hawthorne experiments, there was an underlying one (Gillespie, 1991).

3.1.1. On the Horndal effect

One of the steelworks in the Fagersta Group (the Horndal plant) came to be neglected as regards investment. Top management wanted to test the productivity increase effect of investments, and assumed that the Horndal plant would represent the zero level to the yardstick. The objective was to measure the impact of investments on productivity in several other plants in the Fagersta Group. To top management’s surprise, productivity nonetheless rose by an additional 2.1% per year, which can be compared to a 4% annual increase in the rest of the Group, where considerable investments had been made. The Horndal effect has even also been measured on an aggregated level and estimated as a 1.5% increase in labor productivity (cf. Lundberg, 1961). The Horndal plant was under a threat of closedown during this entire period (cf. Genberg, 1992).

The 1929 World Crisis was a significant factor under the experimental period, and naturally affected the workers, in the Horndal plant (which had started in 1927). The pressure on survival remained as long as the World Crisis itself and the lack of investment meant that it created a persistent “threat-to-survival” situation.

The most important factor accounting for the Horndal effect was the number of minor alterations introduced by local management in equipment and steel rolling practice. The second most important factor consisted of organizational changes, such as central planning and the organization of the work between the companies of the Fagersta group, which meant that equipment was utilized more efficiently. An increase in work effort on the part of labor can be regarded as the third most important factor behind the Horndal effect (Genberg, 1992).

3.1.2. On the Closedown effect

A closedown decision creates a temporary organization during the period of the closedown concerned. If the period of the temporary organization is prolonged, then it becomes possible to see the situation as an action experiment in a real-life organization. There are no mechanisms of control in the temporary closedown organization, and yet many types of improvement and investment are needed. The whole organization focuses
on the task of maintaining production. Somewhat paradoxically, productivity rises when the means of control over everyday production operations are reduced, when investment is lacking and management’s commitment and attention are both low (Bergman & Wigblad, 1999).

Case studies and findings regarding the Closedown effect suggest that unexpected increases in productivity during countdown may have a variety of context-specific causes. One trivial cause is that operations can be speeded up by working more intensively. This depends on an environment favorable to raised piece-rates, and on production management deciding that there is no further need to save equipment from excessive wear (Bergman & Wigblad, 1999). Further, there is a certain psychological explanation of the increased productivity, as uncertainty expresses itself in stress-releasing certainty/activity (Sutton, 1987).

It has been observed that productivity fluctuates throughout a closedown process, primarily due to the way employees interpret the information they are given and the situation as they encounter it. Moreover, the workers’ collective reacts, influencing efforts and performance on the floor. In addition, the evolution of an informal leadership within the workers’ collective often affects productivity: not surprisingly, negative reactions to a closedown decision will often have a negative effect, but it has also been observed that a drop in productivity is retrieved as the psychological stress, anxiety and general emotion simmer down. The workers often take pride in their work, and want to show management that the closedown decision was wrong (Bergman & Wigblad, 1999; Hansson, 2004).

Bergman and Wigblad (1999) argue further that innovative skills acquired through individual and collective experiences at work can find operative space in an organization that allows scope for worker autonomy. The reason for this is that managers and supervisors lose interest in maintaining the established order as the organization dies. Plans for operations, including major investments, no longer head the management agenda. Further, in some cases as management’s control over daily operations diminishes, productivity sometimes actually increases.

4. Methodology

Decline effects sometimes occur when a specific set of psychological and/or group mechanisms are active. For this reason we focus specifically upon these phenomena here. The Hawthorne experiments have been analyzed as a closed system, while the Horndal and Closedown effects are observed in open systems. Our decline perspective allows for a closed systems approach to the Hawthorne experiments and recognizes that all productivity effects are affected by, and are dependent on, exogenous variables such as global or sector crises, declining markets and internal or external environmental changes. All the effects have surprised researchers as well as practitioners, since they are socially driven and are affected to some extent by the exogenous variables.

For the purpose of this article, it is not necessary to return to the original interviews and test protocols, since the recontextualization generates new questions, which could not be addressed before.

While recontextualization can come close to meta-analysis, the two are not the same. Meta-analyses can be rejected here because of their lack of consistency and because they may lead to the risk of systematic bias (cf. Miller & Monge, 1986). In our case, we adopt an analytical-critical overview, conducting an analytical recontextualization of a social
phenomenon, in order to explore and explain an increase in productivity under extreme conditions. Comparability rests on the assumption that an element of decline is present in the Hawthorne experiments, and that it is therefore possible to recontextualize the Hawthorne effect by adopting a decline perspective. Comparability also rests on the observation that all the effects involving an increase in productivity are caused by social effort and human relations.

The focus of the analysis is on an aggregated group level. For the Hawthorne experiments, we consider the separate rooms as aggregates, as we consider the productivity of the closedown cases as separate aggregates.

5. Research on or relating to the Hawthorne experiments—a brief overview

Hawthorne critics have generally misunderstood or misinterpreted the ideological and methodological assumptions of this pioneering research (Sonnenfeld, 1985). Nonetheless, a wide-ranging number of studies have appeared in connection with the Hawthorne experiments. Some of these studies have contributed to the further development and reception of topics such as small-group behavior (e.g. Bales, 1950; Blau, 1955; Homans, 1941, 1950; Katz, Maccoby, & Morse, 1950; Likert, 1961; Whyte, 1959) and organizational theory (e.g. Barnard, 1938; Parsons, 1960; Simon, 1945). The Hawthorne experiments also led to developments in other social science fields such as employee participation (e.g. Kahn, 1975), informal work groups (e.g. Katz, 1965), leadership (e.g. Vroom, 1975) and the social-systematic nature of organizational activities (e.g. Lorsch, 1975).

There has also been discussion as to whether there really was a Hawthorne effect, with Turner (1933) and Jones (1992) claiming that they found no evidence of any such thing, either unconditionally or allowing for direct effects of the experimental variables themselves. Nonetheless, most of the literature on the Hawthorne experiments have claimed and agreed on the existence of a productivity-increase effect, whereas we align ourselves with the work of Mayo (1933) and Roethlisberger and Dickson (1939).

Some interpretations of the Hawthorne effect and the Hawthorne studies have also focused on the human relations perspective (e.g. White & Lippit, 1953), reporting that participants in experimental task groups performed more effectively under “democratic” than under “laissez-faire” or “authoritarian” leaders. Later contributions have claimed that leadership characteristics vary with the nature of the situation (Fiedler, 1964) and with the specific needs or motivations of the individual subordinates (e.g. Cartwright, 1965; Hart, 1943). Pelz (1952) suggested that the individual supervisor’s relations with their own superior—specifically, the extent of their own influence upwards—is a powerful determinant of their influence over their own subordinates. The results of these experiments led to a number of conclusions and criticisms (e.g. Bramel & Friend, 1981; Pitcher, 1981; Wardell, 1979).

Human relation analysts emphasized the great variability of individual characteristics and behaviors, and insisted on the relevance of these differences in understanding organizational behavior (Collins, 1946; Dalton, 1950; Warner & Low, 1947). Further, McGregor (1960) emphasized that the most significant differences between rational systems management theory and the human relations approach lay in the nature of the assumptions made regarding human actors. Other researchers encouraged by the Hawthorne studies stressed the importance of worker participation in decision-making.
within the organization, particularly in decisions directly affecting themselves (Lewin, 1948).

In our view these earlier studies have a bearing on the assumptions and starting-points for understanding the Horndal and the Closedown effects. However, it is also necessary to understand business and motivation in a decline perspective (Cameron et al., 1988).

As already noted, most research on the Hawthorne studies has been focused on endogenous variables, such as pay incentives, good and bad aspects of the job, supervisors and working hours (Scheuer, 2000). Our contribution is to include the macro-level variables, rather than focusing solely on individual factors that influence group performance.

5.1. Mayo’s and Roethlisberger and Dickson’s analyses of the Hawthorne experiments—revisited

The Hawthorne experiments were conducted between April 1927 and the middle of 1932. The test rooms were specially prepared for the experiment and were separated from the other production units. During the experiments, conditions such as working-hours, pay, number of working days per week and the presence and length of rest breaks were some of the variables that were altered slightly during different phases of the experiment. Mayo (1933, p. 249) notes: “The transfer of the five workers into the experimental room was carefully arranged. It was clear that changes in output, as measured by the recording device, would constitute the most important series of observations”.

The experiment consisted of 24 periods of varying length. The majority of the periods showed an increase in output compared to the immediately preceding period and to the first period, whereas a few periods only showed a slight decrease (cf. Mayo, 1933; Roethlisberger & Dickson, 1939). We have not found any analysis or discussion of what took place during the last six periods of the experiment, or of why the output developed as it did during these periods. No information has been published about which variables were altered, or about the motives for altering them.

There seem to be some explanations why output increased continually throughout the period of the experiment. The payment incentive could also be a factor of some small importance, but Mayo (1933) and Roethlisberger and Dickson (1939) proceed to claim that the results were mainly due to changes in mental attitude. The changes themselves and the opportunities for the workers to affect their situation were other factors that can support the explanation of the continuous increases in output. Further, Mayo (1933) claimed that the workers felt that the output was related to the distinctly pleasanter, freer and happier working conditions, the greater freedom, the less strict supervision and the opportunity to diverge from a fixed pace without being reprimanded.

Roethlisberger and Dickson (1939) explained the increase in output in one of the two groups of the Relay Assembly Test Room in terms of changes in the working conditions such as working hours, rest breaks, economic incentives, and improved relations between workers and supervisors. Although output had increased by an average of 12 per cent in the second Relay Assembly Group, it was quite clear that factors other than wage incentives had contributed to the increase. In the Mica Splitting Test Room, the main difference in the conditions was the economic incentive. “In both the test rooms, output tended to increase during the first year […] Apart from these two exceptions, no parallel
developments in the two rooms could be detected” (Roethlisberger & Dickson, 1939, p 148f).

Explanations can be found for the difference in output development between the two groups, namely differences between the groups regarding (1) the type of jobs performed in each test room, (2) the nature and length of the test periods, (3) the payment incentive systems, and (4) the personal situations of the operators. There was no evidence that the difference between the tasks of the two groups could account for the difference in morale between them. In particular, the Mica Splitting Test Group was better paid than the Relay Assembly Test Group, and yet the latter group showed a bigger increase in output and productivity (Roethlisberger & Dickson, 1939, p. 156).

There seemed to be factors other than wage incentives that contributed to the increase. “The efficacy of a wage incentive was so dependent on its relation to other factors that it was impossible to consider it as a thing itself having an independent effect on the individual. Only in connection with the interpersonal relations at work and the personal situations outside of work, to mention two important variables, could its effect on output be determined.” (Roethlisberger & Dickson, 1939, p. 160).

6. The Hawthorne effect—comparison with the Horndal and the Closedown effects

As noted above, the Hawthorne effect was observed in a test room experiment, whereas the Horndal study was more in the nature of an action experiment. The cases in which the Closedown effect has been observed belong to a real-life context.

In the Hawthorne experiments, in the Horndal study, and in all cases where the Closedown effect has been observed, threat has been a prevalent factor. The underlying threat of the Hawthorne experiments is somewhat similar to the threat of closedown plants. Roethlisberger and Dickson (1939, p. 245ff) actually mentioned that the reason for ending the experiments was the shortage of work, but this comment was not discussed further. In the Hawthorne case it was not the threat of losing their jobs, but of being sent back to jobs similar to their previous ones. But for comparative reasons, it is important to note that this had also been the case in a few of the reported Closedown effect cases, where the workers were offered other similar jobs in a nearby production unit (cf. Bergman & Wigblad, 1999).

No capital investments were made during the experimental periods at Hawthorne. Rather, the experiments were conducted with the same set of production equipment. In the Horndal case, no capital investments were made between 1927 and 1952, but productivity still increased. In closedown cases capital investments are very rare; downsizing and the outsourcing of production equipment are more common.

The possibilities of rationalizations were limited by the highly standardized and simple assembly. Minor alterations in equipment also helped to sustain a steady increase in productivity. Increased work effort, which was perhaps a result of the distinctly pleasanter and freer working conditions, creates yet greater freedom, with less strict supervision and the opportunity to diverge from a fixed pace without being reprimanded (Mayo, 1933). The Horndal case and the cases where the Closedown effects have occurred, are similar to the Hawthorne experiments. Rationalizations in production equipment are rare.

Management control was strong in both the Hawthorne experiments and the Horndal plant. In both contexts, management took an active part in conducting the process of the action experiment, and limited the operative space of the workers. In all cases where
management control over daily production operations is reduced, productivity increases (Bergman & Wigblad, 1999) in a manner similar to that in the Hawthorne studies. Operations could be speeded up, since the workers could focus on their given task and without being distracted by other problems or issues in the organization.

Informal leadership evolved in the Hawthorne, the Horndal and the Closedown cases. In the case of the Relay Assembly Test room, one of the operators began to dominate, affecting both the rest of the operators and the test leaders. As a result of conflicts with the test leaders, this operator was replaced by another one, who also became the new informal leader of the group (Gillespie, 1991, p. 60ff). Although the test room leaders in the Hawthorne experiments tried to control the operators, the informal leaders came to play an important role in the development of the group dynamics (Roethlisberger & Dickson, 1939). The informal leader/s acted as a driving force, affecting individual operators when it came to increasing or decreasing their efforts or performance.

Together with the development of informal leadership, informal groups have also appeared, for instance in the Hawthorne and Horndal studies as well as in the cases where the Closedown effect has been observed (e.g. Bergman & Wigblad, 1999; Sutton, 1987).

The operative space for the operators in the Hawthorne experiments was limited; the researchers clearly defined both the operators’ tasks and the settings of the different test periods. In the Horndal case, the operative space was moderate, even for the action experiments, since the workers were able to act freely to some extent, despite the restrictions in the organization such as the centralization of the production planning for the plant (Genberg, 1992, p. 319).

Innovative skills emerging from individual and collective experience at work can find operative space in an organization (Bergman & Wigblad, 1999), and this was definitely the case regarding the Hawthorne effect as well as regarding the empirical evidence supporting the Closedown effect.

The group of workers drew closer to each other in order to handle the unique situation, and from this they came to act, plan and control their daily activities (Bergman & Wigblad, 1999; Roethlisberger & Dickson, 1939). Workers simply had to focus on production in an environment that imposed no constraints and that was unaffected by interruptions.

The Hawthorne operators were highly motivated throughout the experiments (Mayo, 1933; Roethlisberger & Dickson, 1939). The motivation of the Horndal workers was moderate due to the restrictions and the lack of expansion and development, as well as to the centralization of planning and management control that limited the operative space of the workers (Genberg, 1992, p. 319).

The researchers at Hawthorne did alter some of the conditions of the operators, for instance their wages. It was not evident that the payment incentive was an enduring factor when it came to explaining the increase in productivity. However, the 1929 Depression was a fact of life and the operators had to bear more responsibility for their families due to other members’ unemployment (Gillespie, 1991, p. 128; Rose, 1975, p. 138). This resembles some of the closedown cases, where it has been noted that severance payments and productivity bonuses are a strong explanatory factor in the initial closedown phase, together with other components of retrenchment programs such as educational programs and outplacement assistance. In closedown cases, the payment incentive has been a driving force for the workers, especially in the short-term perspective of the process. However, the payment incentive seems to have a diminishing effect in a long-term perspective (cf. Hansson, 2004).
Table 1
Summary of the comparison between the Hawthorne, the Horndal and the Closedown effects

<table>
<thead>
<tr>
<th>#</th>
<th>Variable</th>
<th>Hawthorne effect</th>
<th>Horndal effect</th>
<th>Closedown effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Context setting where the specific effect has been observed</td>
<td>Test room experiment</td>
<td>Action experiment</td>
<td>Real life</td>
</tr>
<tr>
<td>2</td>
<td>Occurrence of threat</td>
<td>Threat existed that the experiments would end if the productivity development did not meet the expectations of the researchers</td>
<td>Threat of closedown existed between 1927 and 1952 as there was a threat, not yet a formal decision, of closedown</td>
<td>Threat is always present, as a formal closedown decision has been made. The workers will eventually lose their jobs</td>
</tr>
<tr>
<td>3</td>
<td>Capital investments</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Rationalizations in production equipment</td>
<td>Minor</td>
<td>Minor</td>
<td>Minor</td>
</tr>
<tr>
<td>5</td>
<td>Degree of management control</td>
<td>High</td>
<td>High</td>
<td>Moderate to low, diminishing over time</td>
</tr>
<tr>
<td>6</td>
<td>Development of informal leadership</td>
<td>Yes</td>
<td>Yes—to a minor extent</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Development of informal groups</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Degree of operative space for individuals</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>9</td>
<td>Degree of motivation among the operators/ workers</td>
<td>High</td>
<td>Moderate</td>
<td>Fluctuating and sensitive</td>
</tr>
<tr>
<td>10</td>
<td>Workers’ payment incentives</td>
<td>Initially high and then moderate</td>
<td>Low</td>
<td>Initially high, diminishing over time</td>
</tr>
</tbody>
</table>

6.1. Summarizing the comparison

Summarizing the comparison (see Table 1)

7. Applying a decline perspective to the Hawthorne experiments

The adoption of a decline perspective makes it possible for us to recontextualize the Hawthorne experiments, and in doing so we become aware of several similarities between these experiments and situations involving the threat of, or a decision about, closedown. In all but one group, there was a notable increase in productivity. In this one group, anxiety and uncertainty about the future meant that productivity developed more slowly. In the other groups, the threat of the whole experiment coming to an end induced the operators to take the initiative; planning and controlling their day-to-day operations and sustaining a continual rise in productivity. At the beginning of the experiments, the threat was not as strong as it later became. Over time the test groups developed their own informal organizations and an informal leadership, and the test leaders felt that the experiments were being jeopardized. Consequently, the participants sensed the threat of termination, which was recorded at this point for the first time. From then on, this threat persisted, as the test leaders had told the participants that the project might be terminated if it did not
meet organizers’ expectations or was not concluded according to the test plan (Gillespie, 1991, p. 61ff).

Earlier interpretations of the Hawthorne experiments have claimed that the Hawthorne effect was due to the attention that the researchers and managers paid to the workers in the test room, but that as management’s interest subsided over time the groups grew stronger and assumed more control over the day-to-day operations. This can be compared with the Closedown effect, whereby the “innovative skills acquired through individual and collective experiences at work can find operative space in an organization where there is scope for worker autonomy” (Bergman & Wigblad, 1999). Management’s attention to the workers was on the decrease throughout the closedown process and during the later phase of the Hawthorne experiments. But management’s diminishing attention was assigned the opposite role—i.e. of explaining the rise in productivity—in earlier interpretations of the Hawthorne effect. The two opposites, low and high management attention, cannot be used to explain the same effect.

We turn instead to our recontextualization of the Hawthorne effect, which has disclosed several indicators supporting the hypothesis that in extreme situations, where the threat of termination is present, effects in the shape of a rise in productivity frequently occur. The strong pattern of similarities between the Hawthorn effect and the effects of Decline are presented as evidence for this interpretation in Table 1.

The analytical review shows that the greatest dissimilarity between the different contexts appears where different types of threats arise. Experience of the Horndal and Closedown effects shows that the threat varies somewhat because it is often externally driven, emanating from factors such as declining market conditions, investments, etc. The Closedown effect is a manifest threat, compared with the latent character of the other two effects. Although the threats come from different sources and are variously compelling for the individuals concerned, their effects on the social system are similar in many ways.

Closedown often makes the greatest impact at the individual level. Research shows that it causes the loss of an important network of mutual obligations among the employees. It destroys the major social arena in which they have spent much of their time. Because of this loss, an organizational closedown is emotionally charged; it causes mourning, anger, depression, sorrow and fear of the unknown, the future, and the ambiguous present (Cunningham, 1997; Harris & Sutton, 1986; Sutton, 1987).

One point that motivates a new characterization of the Hawthorne effect is that the workers influenced, developed and to some extent controlled the planning and management of the experiments themselves. Thus, although the intended purpose of the Hawthorne experiments was to alter various parameters in order to view their effects on productivity, the outcome was that irrespective of the changes made, a continuous increase in productivity was observed, because the workers decided how much to produce in order to perpetuate the experiments (Gillespie, 1991).

8. Conclusions

Threat, whether or not it is expressed in a decision, is the one explanatory factor linking the three identified effects on productivity. Analysis of the threats prevailing in the three cases shows that productivity increased in them all. Earlier interpretations of the Hawthorne experiments claimed that the Hawthorne effect was due to the attention paid by researchers and management to the workers in the test rooms. But management’s
attention dwindled as the experiments proceeded, particularly in the later stages of the experiments, which seems to contradict the conclusions drawn in these first earlier interpretations. By opening up the closed system of such interpretations, we recognized that the existence of threat is one of the factors to explain the rise in productivity in the later stages of the experiments. The Hawthorne effect—i.e. non-specific effects caused by participants knowing they are the subjects of a study—has been taken into consideration in a great many research experiments, to ensure that no known or unknown biases are present in experiments. On a basis of our present analysis, we suggest that the same consideration should be paid to the threat factor, i.e. it should be ascertained that the subject are not feeling any mourning, anger, depression, sorrow or fear of the unknown future that can also create this bias. We recommend that threat should be taken into account as one component of the Hawthorne effect.

Although threat was similarly predominant in affecting an increase in productivity, there is a difference when it comes to the extreme nature of the situation in each separate case. If the effect on the individual concerns the possibility of redundancy while the labor market situation is also tight, this makes the “extreme conditions” more extreme, but if the effect merely concerns relocation to another job then the situation is less extreme. Our hypothesis is that the more extreme the conditions, the stronger the reactions that can be expected from the individuals and groups involved.

Our initial hypothesis stated that in extreme situations, where the threat of termination is present and/or clearly expressed, as it is in the Hawthorne experiments, effects in the shape of productivity increases frequently occur. This hypothesis is supported by our findings regarding similarities between the Hawthorne effect and the Decline effects. The similarities found are the presence of threat, the lack of capital investment, minor rationalizations only, the development of informal leadership and informal groups. These similarities between the three effects all support our main conclusion. Further, the similarities show that innovative skills acquired through individual and collective experiences at work can find operative space in an organization where there is scope for worker autonomy.

The presence of these similarities allows for transferability between the different effects, which in turns suggests that cross-fertilization between research on human resource management and organizational decline could be fruitful. The similarities observed here all suggest that in any analysis of the Hawthorne effect, the presence of threat is an important factor to be considered. Researchers analyzing productivity increases should be alert to the possible presence of threat, and should take this into consideration as an explanatory factor.

It is equally important to consider the dissimilarities that have been identified here in the analysis. The experimental effect of the Hawthorne studies was based on the attention paid to the operators by the researchers and management. In cases of closedown, the opposite has been observed, since operations management is reduced as the closedown proceeds. Despite these distinct dissimilarities, the operators and workers in both cases enjoyed some degree of autonomy. The following hypothesis can be derived from this, namely that a high or moderate degree of workers’ autonomy will enhance productivity. And, more specifically, when moderate allowance for operative space, informal groups will emerge and will enhance productivity, and when this scope is extended into operations management, informal leadership will evolve, accompanied by yet further increases in productivity.
Further, we cannot exclude the possibility that the experimental effect was due to the development of an informal organization in the test rooms, and that this which was indirectly affected by the 1929 Depression.

Although organizational decline has tended to be neglected as a research topic, it can enrich research on Human Resource Management (cf. Hansson, 2004; Whetten, 1980). By adopting a decline perspective, we have offered a complementary understanding to productivity development in the Hawthorne experiments. As threat was an important factor in explaining that the studied productivity increased, at least from the point when the informal leadership and turbulence began to develop in the groups. We suggest that threats can operate in different directions. One of these is evident in the findings regarding the Mica Splitting Test Room, where productivity did not develop in the same way as it did in the Relay Assembly Test Room. However, in the Relay Assembly Test Rooms, the workers constituted an informal organization and established an informal leadership, an informal hierarchy and consensus regarding objectives, in order to maintain a high productivity. This, together with other indicators, establishes a strong link between the Hawthorne effect on the one side and both the Horndal and Closedown effects on the other.

Human resources do matter, and we argue that acknowledgement of this fact (?) enriches research on organizational decline as well as research on small-group behavior. We recommend that research on decline should link up with research on small-group theory as reported by the human relations movement. This implies that there is a need for more socially responsible management approaches as a managerial setting for declining and closedown contexts.

Similarly, research on Human Resource Management could benefit from focusing on organizational decline. The dynamics of decline and closedown can extend our understanding of the way individuals and groups act under extreme conditions such as latent or manifest threat. Threat can act as a motivator and/or a demotivator and, as research on the Closedown effect has shown, employees become sensitive to the managerial setting and the information provided, with the result that productivity tends to fluctuate. We have argued that the Closedown effect is a productivity-increasing effect that can be identified if the closedown period as a whole is taken into consideration. Nonetheless, throughout this process and at the level of detail, the productivity fluctuates as the closedown process is being fine-tuned.

References


Further reading


WHEN THE LIGHTS GO OUT

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WHEN THE LIGHTS GO OUT

Abstract

This paper provides a fine-tune analysis of critical events that appeared during a closedown process, and outlines a theoretical model of explanations to the productivity increase effect, a Closedown effect, that occurred. The productivity development was dependent of the workers interpretations of the information provided by the management as well as actions and reactions to the prevalent situation. The dialectics between management and the workers changed throughout the closedown period, with fewer conflicts, faster conflict handling, increased formal and informal autonomy and increase in workers initiatives of changes in work design. A HRM-program had an initially positive effect on the workers, whereas its importance was diminishing. The closedown decision generated changes in the structure; control over daily operations diminished, informal leadership evolved and individualization grew stronger as the importance of informal groups deteriorated. Workers found operative space and developed innovative skills and day-to-day rationalizations, job rotation decreased, and production planning deployed to lower levels of hierarchy.

Key words: Closedown, Closedown effect, Threat, Individual reactions, HRM-program
Introduction

This paper explores a closedown process and its effect on social dynamics and productivity development, where management has applied a socially responsible setting providing an extensive HRM-program. To be able to make an in-depth analysis of this interplay of management and workers, this paper provides a fine-tuned analysis of a process of a single-plant closure, focusing on the critical events concerning workers reactions and the productivity development, in order to outline a theoretical model of explanation to the development of productivity.

A review of the literature on organizational metamorphosis shows that there is little understanding of what happens in an organization during a process of closedown, rather research within this stream has focused on decline, downsizing, retrenchment, and turnarounds. There have been some studies analyzing why organizations die (e.g. Cameron & Whetten, 1983; Carroll & Delacroix, 1982; Hannan & Freeman, 1984). In contrast, there has been only little research done, and developments of theoretical and conceptual frameworks on how the process of organizational closedown unfolds (e.g. Hardy, 1985, 1987, 1990; Wigblad, 1995; Bergman & Wigblad, 1999; Sutton, 1987; Brown, Schmitt & Schonberger, 2004; Hansson & Wigblad, 2006b; Wigblad, Lewer & Hansson, 2007).

A closedown process generate certain dynamics in the organization, operations management is diminishing; workers autonomy increases, innovative skills can find operative space and planning of daily operations deployed to the workers and informal leadership evolves (e.g. Bergman & Wigblad 1999; Littler & Hansson, 2005; Hansson & Wigblad, 2006b; Wigblad, Lewer & Hansson, 2007). This together with a recorded productivity increase effect, a Closedown effect, can suggest that the understanding of individual and small group behavior
might have to be reconsidered (c.f. Sutton, 1987; Wigblad, 1995; Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004;).

There are two principally different ways for the management to handle the closedown process. First, management can provide a socially responsible (SR) HRM-program, taking into account the demands of the labor union and the workers in order to handle the closedown process. SR-closedowns support the workers search for alternatives throughout the closedown process, in order to cushion the impact of the decision (Hansson & Wigblad, 2006b). The HRM-program often include components such as severance payments, outplacement assistance, education and re-training programs (c.f. Hardy, 1985, 1987, 1990; Robbins & Pearce, 1992; Barker & Mone, 1994; Barker & Duhaime, 1997). Chadwick, Hunter and Walston (2004) argue that HRM practices play a central role in prescriptive account of what makes for successful performance in downsizing. Considerations for employees’ morale and welfare during downsizing events contribute to positive performance.

Second, management can provide a non-socially responsibility (Non-SR) HRM plan in order to manage the successive downsizing rapidly, according to technical and business opportunities, towards the final closedown. A non-SR approach does not consider the demands and requirements of the labor union and is without any active support to the employees, neglecting the negative impact of the decision on employees (c.f. Hansson & Wigblad, 2006b; Wigblad, Lower & Hansson, 2007).

An often-applied argument for closedown is the need for reducing the cost by transferring production to low-wage countries and/or the need of reducing production capacity within the corporation, due to market saturation or decline. The latter has been the case of Gusab
Stainless (Gusab), a unit within the Sandvik Steel Corporations Wire Division (Sandvik Steel), in Sweden. In January 2002, Sandvik Steel decided to close Gusab down, and the lights went out, at August 31, 2003.

The Gusab case is interesting in several aspects. First, the closedown period was 18 months, which is a comparably long period internationally, enabling the opportunity to study fluctuation in productivity and workers reactions, revealing multiple fine-tuning variations. Second, the relationship between management and the labor union was characterized by non-conflict, and it was a fact that the labor union played a central role in the development of the HRM-program. Third, the management applied a socially responsible approach.

The purpose of this paper is to explore the impact of an applied SR management approach, and how the dialectics between management and the workers affects the productivity development. This is done in order to unfold an extended explanation to what happens in such a closedown process, expanding both the theoretical and empirical domains of research on organizational closedowns.

The contribution of this paper is two-folded. First, a time-framed, process based, empirical narration and a fine-tuned analysis of critical events in a closedown case, where the management applied a SR-approach. By providing a fine-tune analysis this paper advances the understanding of how a closedown process unfolds as well as how critical events influence the productivity development. Second, a theoretical model is developed taking into account and distinguishing productivity enhancing effects as well as anteceding variables to increased productivity during a closedown process, as well as considering the temporal dimension of these variables explaining their importance over time. By developing a
theoretical model this paper advances the understanding of the inter-relationship among explanatory factors to the appearance of the Closedown effect.

The disposition is as follows: the methodological considerations are outlined, followed by a literature review and empirical narration. An analytical discussion is followed by theoretical implications, whereas a theoretical model is provided.

Methodology

The empirical study of organizational closedowns is more difficult than the study of expansion and growth, as it is often difficult to access information and the limited amount of researchable objects, and the fact that the organizations literally vanishes. It is hard to receive randomized samples of organizational closedowns, why a theoretical, purposive and judgmental sample is applied in this case (Eisenhardt, 1989).

This study was conducted at Gusab Stainless (Gusab) in Mjölby, Sweden from April 2002 until the end of August 2003. Gusab was a part of the Sandvik Steel, manufacturing (steel) wires. Gusab had 104 employees, where 87 were blue-collar workers, as of the initial closedown decision (see appendix 1).

Previous studies, where a closedown effect has been identified, has traditionally been carried out in manufacturing organizations (c.f. Bergman & Wigblad, 1999; Hansson & Wigblad, 2006b; Sutton, 1987; Wigblad 1995). Based on these studies, this paper follows and extends the empirical domain, in order to add new information and validate previous studies. It was necessary to enter the organization while it still was alive in order to gather prospective data and to be able to follow the process of closedown. In the Gusab case as the data collection
began shortly after the initial closedown decision. Access to the organization is a vital factor. There were no limitations in acting completely freely within the company as access in time, informants and material.

I began the research by developing a rough analytical framework based on case studies of where the closedown effect has been identified. This was broadened with a review of existing literature. I traveled back and forth iteratively, between the empirical narration and the analysis throughout the data gathering, in order to provide the possibility to generate and focus questions for the interviews and relate them to the working framework. This together with the materials received from the company served as the foundation of the data collection.

Almost one month was spend in the company before the formal interviews began, in order to get a better understanding of processes and activities conducted by the workers. Initial interviews was conducted with randomly selected blue-collar workers from different working groups, before the formal interviews took place, in order to generate an orientation and deepened understanding of the type of work that was carried out in the production and an understanding of the working processes in the production department.

Formal interviews were held with the management, representatives of the labor union, team leaders and operators in the production. Forty-seven semi-structured interviews were made, which varied in length from 25 minutes to two and a half hour. Twelve informants were interviewed once, and 14 were interviewed twice or more. When the empirical saturation was reached, the data collection through interviews was ended (c.f. Eisenhardt, 1989). The interviews were tape-recorded and transcribed (see appendix 2).
Previous studies reveal that statistical records on productivity are seldom kept during the closedown period (e.g. Bergman & Wigblad, 1999; Hansson & Wigblad, 2006b). After discussing this experience with local management, production statistics were maintained especially for this study. Production statistics, covering the period of January 2000 until March 2003, was collected and a descriptive statistical analysis was developed. This analysis served as a base for the interviews where the informants described their experiences and reflections of the closedown process, actions during the closedown and explanations to fluctuations and growth in productivity during the closedown process, connected to actual periods according to productivity statistics.

In the calculation of the productivity statistics, attention is given the successive downsizing of employees, as they have been deducted subsequently from the base of the applied productivity measure, in order to receive accurate information on how the productivity actually developed.

From April 2003 until the final closure, no statistic records were kept. The narration of this part of the process was based on both interviews and observations. The results from this period and can therefore not be considered being statistically valid, rather this data was collected in order to broaden the narration.

Since it is difficult to generate theory from single case studies, the iteration process of analysis ended when reaching theoretical saturation (c.f. Eisenhardt, 1989). The intention of the narration of the Gusab case is not to generalize, rather to add one processual-based in-depth case analysis to extend the empirical domain of closedown studies.
An Organizational Closedown Perspective

Studies of organizational downsizing and closedowns are important, because the social consequences resulting from disruptions to the economy and to individuals dependence on the organization. Several theoretical and conceptual frameworks on decline and downsizing has been provided, focusing various topics such as the impact of layoffs on survivors and job insecurity (e.g. Greenhalgh & Rosenblatt, 1984; Brockner, et. al, 1987, 1988), dynamics of downsizing (e.g. Littler, et. al, 1994a, b, 2003a, b) and psychological responses to threat (e.g. Staw, Sandelands & Dutton, 1981; Shaw & Barrett-Power, 1997). These frameworks are limited to the fact that they do not handle environmental change nor consider the dialectics between interest groups.

The literature on plant closures is scattered and diverse. It consists of traditional labor market and community studies (e.g. Newcastle, 1980); social and regional geography studies (e.g. Watts & Kirkham, 1999), and limited economics literature (e.g. Bernard & Jensen, 2003). Most of these studies have focused on the wider effects of closure.

Plant closure can occur in a variety of contexts. First, and most simply, the closure can be a single plant (or office) closure marked by the demise of the company. However, most plant closures are multi-plant closures (e.g. Arthur, 1994; Becker & Huselid, 1998; Chang & Singh, 1999; Datta, Guthrie & Wright, 2003). However, the understanding of closedowns in general and single plant-closures in peculiar is limited and fragmented (e.g. Hansson & Wigblad, 2006b; Littler & Hansson, 2005).

One stream of literature has reported a productivity increase effect, a Closedown effect that occurs throughout the process of closedown (e.g. Bergman & Wigblad, 1999; Hansson &
Explanations to the Closedown effect have been identified in context-specific factors such as diminishing management and control and increased worker autonomy. Innovative skills acquired through individual and collective experiences at work can find operative space. Operations can be speeded-up, as workers focus on the task and are not forced to solve other problems or issues in the organization. Still, the productivity development is dependent on the workers motivation and efforts (Bergman & Wigblad, 1999; Hansson & Wigblad, 2006b).

Distinguishing organizational closedowns, including what is sometimes referred to as plant closure and organizational death, from downsizing becomes necessary, in order to demarcate both literature and empirical objects. Littler and Hansson (2005) outlines a categorization for that purpose considering different levels of restructuring; Based on commonly applied levels of analysis corporate, business, assets and routine levels are identified. Three levels of business processes of continuity are identified non-continuity, some continuity of business processes under new ownership and temporary cessation, with restart or reversion to any of the previous categories.

Workforce reductions can be made, independently of the level of restructuring. That is downsizing staffing on corporate, business, asset and routine levels, without closing down. This do not imply that it necessarily have to become non-continuity, some continuity of the business process under new ownership or even a temporary cessation. Downsizing strategies can be distinguished regarding those who solely reduce the workforce and those that accompany downsizing with planned work redesign, focusing on reconfiguration of jobs and organizational structures (Chadwick, Hunter & Walston, 2004)
Applying the categorization on the Gusab case, categorizing it as a plant closure as both the analytical level and level of restructuring is on the business level, and business is discontinued. That is, the Sandvik Corporation and in particular the Sandvik Steel Division decided to close down the entire Gusab production unit.

**A short note informal groups and collective actions**

Traditionally, contemporary industrial relations are based on hegemonic control of the economic and political relations of production by the capitalist class (Van Maanen, 1977; Burawoy, 1979; Jermier, 1988). This is normally the situation in organizations under normal working conditions. When an organization is under the decision of closedown, management tends to abandon the requirements on levels of output and workers can find operative space (Bergman & Wigblad, 1999; Hansson & Wigblad, 2006b).

Non-contractual and informal interactions occur between members of work groups; these interactions can take the form of activities and psychological experiences (Encinosa, Gaynor & Rebitzer, 2007). In the sociology of informal groups, an informal and spontaneous organization, based on mutual expectations and strong norms for social conduct and the generally accepted behavior, relationships are formed (Hodson, 1991; Bélanger, Edwards & Wright, 2003; Hoel & Bael, 2006).

Informal groups can affect the individuals in different directions, intensifying or impairing the behavior, dependent on the situation and the actions and decision that are made. Informal group influences the individual and often determines whenever dominant level responses are appropriate or inappropriate for performance (Hansson & Wigblad, 2006a).
Cutcher-Gershenfeld (1991) outlines different patterns in labor-management relations for analysis. Noting the characteristics for selective categories relevant for the fine-tune analysis of the Gusab case: The traditional pattern of relations is characterized by having a high level of frequency of conflicts, slow speed of conflict resolution, and low in informal and formal worker autonomy and worker-initiated changes in work design. The transitional pattern of relations is characterized by having low levels of frequency of conflicts, average levels of speed in conflict resolution, informal autonomy and worker-initiated changes in work design, low level of formal worker autonomy. The transformational pattern of relations is characterized by having a low level of frequency of conflicts, fast speed of conflict resolution, high levels of both formal and informal worker autonomy and worker-initiated changes in work design.

A short note on productivity measures

Studies on closedowns have utilized simple productivity measures of workers productivity (output per worker over specified period). Some of the data for both downsizing and closedown refers to managers’ perceptions of productivity increases in larger firms (e.g. Zatzick & Iverson, 2006). Measurement of labor productivity is a complex issue and ideas about performance measurement have radically changed over recent years (e.g. Uusi-Rauva & Hannula, 1996). In relation to labor, single factor productivity assumes that labor inputs are homogeneous and easily measured. This often is not the case as the quality of labor inputs varies according to the characteristics of labor (Zatzick & Iverson, 2006). In this case, the productivity measure applied is ton/hour and accounts for the successive downsizing. The applied productivity measure here is relevant in order to generate comparability between the periods before and after the closedown decision.
The Gusab Stainless Case

Gusab was founded in 1876 and was from 1990 a part of the Sandvik Steel, as it was acquired from Gunnebo Bruk, Sya Bruks AB. Within Sandvik Steel, wire production was held at two locations in Sweden, Mjölby and Sandviken. Three other wire production sites in the corporation were located in Spain, Brazil and USA.

The Mjölby municipally in which Gusab was located was characterized by a moderate unemployment rate (5.5%, compared to 5.8% for Sweden in total (2002)) and held approximately 25,200 inhabitants (June 2003). The industrial structure was characterized by relatively few manufacturing companies and located to some distance in other industrial regions.

Competition had increased as Asian actors became more active and stronger on the international market and the demand was fluctuating, still with a weakening trend. Prices on manufactured wires had decreased, prices on rolled steel had increased, and margins were decreasing. In the beginning of year, 2000 there were four major wire manufacturers in Sweden including Gusab.

Prior to the closedown decision, Sandvik Steel management addressed problems at Gusab. Gusab had the less favorable fit of the production-mix for the future of wire production within Sandvik Steel. It was argued that Gusab was located too far away from the research department in Sandviken. Over-capacity within the Wire division of Sandvik Steel was a reason for decreasing the number of production units, increasing the efficiency and adjusting the production capacity in the remaining sites. The production sites in Brazil, Spain and USA were seen as strategically important and therefore not relevant in the discussion of which
plant to close, why only the Gusab and Sandviken plants were the real alternatives in the discussion.

The net-profit development of Gusab was not sufficient in comparison to the other production units. Some investments were made at Gusab, which during the late 1990s came to affect the result of Gusab negatively. Since 1989, Gusab showed nine consecutive years of economic negative results and the workers were to some extent aware of the prevalent situation and experienced it as a threat. The workers did little in order to handle that situation and continued work as usual. Still, Gusab showed a positive result over the last two years prior to the closedown decision.

When information was given to the employees at Gusab in February 2002, Sandvik Steel management pinpointed the argument that no decision was made on a closedown of Gusab. Sandvik Steel addressed an investigation for evaluating the production units and discussing alternative solutions to the situation. The group that was designated to conduct the evaluation consisted of the local and Sandvik Steel management as well as the labor unions. This investigation did not change the conditions for Gusab and the formal closedown decision was made.

The organizational structure was functionally divided. The administrative functions such as planning, purchase and personnel were located in the office building. The production unit had been reorganized prior to the closedown decision to semi-autonomous groups, where the workers were given extended responsibility for planning, production and testing. This new form of organizing the work was abandoned as the closedown decision came, turning back to an earlier form of organizing, with functionality responsibilities among the different sections.
in the plant. Most of the workers at Gusab had a comparably limited education and a minority had completed studies at a university level.

Gusab was characterized by having strong informal groups. Several of the employees lived in the local area of the plant and participated in joint social activities during spare time. At the plant, the workers were designated to specific routine-based tasks such as wire manufacturing, warehousing, testing and maintenance. Operations were organized in minor autonomous groups that strengthened the informal groups, who during the first period of the closedown process had a responsibility for planning and operations. The majority of the production was produced for unique customer driven orders and a minority of the volume produced was completed for stock.

The closedown process

The aggregated productivity development from January 2000 and throughout the closedown was positive. During 2000, the productivity was on a comparably high level, whereas Gusab during May 2001 – Jan 2002 faced a decrease in productivity, due to a weakening trend on their market.
Figure 1: Productivity January 2000 – March 2003

Figure 2: Productivity January 2002 – March 2003

Figure 1 represents the entire data set of productivity measurement and is relevant for the conduction of the comparison to the closedown period. In figure 2, a trend line is added for the specific closedown period (January 2002 – March 2003), the dotted trend line represents the aggregated productivity development for the period of January 2000 – March 2003, showing a positive productivity development for both periods. Notably, the productivity had a stronger positive development during the closedown period, compared to the total period of
accessible data. During the closedown period, the capacity utilization increased from 87% (on average for January 2000 until December 2002) to 96% (on average for the closedown period). Notable is that during the period of 2000 – 2003 there was a constant flow of orders, with a slight increase of the order stock during 2002.

Now turning into critical events that occurred during the closedown process, these were identified as events that had a major implication in the closedown process, these are plotted in figure 2:

**Critical events (CE)**

1. Rumors start to spread in the organization about a possible closedown.
2. Closedown decision.
3. Three-month evaluation completed.
4. Wage-earners report completed.
5. HRM-program negotiated and decided.
6. All time high in productivity.
7. The agreement with the potential customer fails.
8. The workers get the opportunity to finish all orders in stock.

In December 2002, rumors started to spread in Gusab that a closedown decision was prevalent. These rumors were not confirmed from Sandvik Steel or the local management. Still, the local management knew about the closedown plans already in the autumn of 2001. However, they were forbidden to inform the employees of Gusab about this (CE 1.). As one of the respondents put it: “*There had been rumors going on for quite some time, we were aware about them, but couldn’t believe them, nor take them seriously […] over the years rumors had been drifting around and we couldn’t think that it was for real this time.*”

As the closedown decision was announced (CE 2.), management held a meeting for all the employees, where information on the background, and the arguments for the closedown were
presented. The decision came as a shock to most of the employees, even if only a few of the respondents argued that it was expected, but not at the time for the announcement.

In general, the respondents where clear on the fact that they believed that the local management did a good job before and during the closedown. They believed that the local management took responsibility for the closedown providing, what the respondents felt to be, in an international comparison, generous HRM-program. One of the respondents argued: “The local management is on our side – they really try their best to help us in this situation. It is those people [the management] in Sandviken that is the real problem.”

As the closedown decision was announced formal group leaders took a responsibility, together with the labor unions on handling the situation, encouraging the employees to maintain their production as such and an attitude of leaving the organization with a maintained pride evolved. The formal group leaders assigned to different work-groups, shared information concerning the actual situation and got responsibility for the day-to-day information to the workers. The formal leaders’ attention and presence in the day-to-day activities diminished over time.

In February 2002 the formal announcement of the closedown decision came. The local management objected to the decision and demanded a serious investigation, as they believed that the decision was made on erroneous grounds. Sandvik Steel agreed upon this, in accordance to Swedish legislation. Gusab got three months in order to prove their capability and the productivity rose during that period, January – April 2002. The local management believed that this investigation would not change the informal decision they believed that Sandvik Steel already had made. As predicted, after the three months a decision was made
establishing the final date of the closure (CE 3.). As one of the managers stated: “Even through they were willing to conduct yet another investigation of the alternatives and our situation, we knew that it wouldn’t change one thing from the initial decision […] we knew that we were doomed from the very beginning.”

A wage-earners consultant was contracted by the labor union and presented in April 2002 an alternative analysis on the arguments and economical consequences of the closedown, counter arguing the closure. The report stated that several inaccuracies in the decision documents from Sandvik Steel, such as the savings of conducting the closedown of Gusab, costs for restructuring and education, transmission of data, and expected decreased productivity during the running in phase for machines. The report generated arguments for a preservation strategy, but was neglected and dismissed by corporate management (CE 4.).

The productivity declined in May 2002, as in the case of formal decision. This was followed by negative reactions from the workers. At that time, there was interplay between the workers and the labor union. The workers requested the labor union to put pressure on the management in order to provide social responsibility for the decision. The labor union also tried to extend the life of the organization as they argued that Gusab was an important part of the Sandvik Corporation. The willingness to understand the arguments of the management was limited, and the labor union could not affect the closedown decision. However, they were able to negotiate the HRM-program (CE 5). As one of the labor union representatives claimed: “From our perspective, Gusab is by far the best wire manufacturing unit and the least thing that the management can do it to provide a decent situation for us, and take their responsibility for the decision that is made.”
The HRM-program was discussed and the workers found it to be a fair deal. Within the HRM-program a payment incentive scheme was developed. This was based on the production and the volume sold. The employees got used to a higher salary after a couple of months; after a while, the employees came to neglect the presence of the closedown, which was evident in the low activity on applying for new jobs. The respondents found the bonuses, in the short-term perspective, as motivating and slightly less motivating in a long-term perspective.

Other components in the HRM-program were job-search aid, training in resume writing, educational programs tailored for the single individual and an early-retirement program. The HRM-program that was established served and served as a foundation for managing the closedown process. The labor unions were, despite the closedown decision, pleased with the retrenchment agreement in the HRM-program (CE 5): “Yeah… we were quite pleased with the negotiations, as we managed to get our requirements accepted and included in the package, without any help from the central labor union.”

Renewed hope came to the organization in the autumn 2002, as rumors started to spread about an opportunity of partial survival, as there was one customer showing interest in supplying their need from Gusab. Out of the 108 employees, the local management calculated with a continued production for approximately 30 people. Due to these rumors activities, performance and efforts increased as some of the workers were interested in maintaining their employment. The productivity continued to increase between May and October 2002, and the plant noted its all time high in October the same year (CE 6). As one of the respondents stated: “Most of us really believed that this new opportunity was going to save us, or at least provide jobs for some of us […] several guys tried really hard to show themselves from their
best side in order to be picked out for the continued production, sad but true... the deal never came through and that’s a real shame."

As the critical events, 7 – 9 occurred the productivity measurements had ended. Still, the apprehension of both the management and the respondents together with the observations indicated that the productivity remained on a high level and did not decrease until the very end.

As the negotiations failed (CE 7), the respondents claimed that the anger and frustration once again rose. This anger and frustration was aimed at the top management, as the respondents believed that Sandvik Steel had delayed the agreement process causing the failure. One of the respondents claimed “Sandvik never wanted the deal; I believe that they acted too late. It really pisses me off knowing that they could have done more for us.”

Gusab had to continue the closedown in accordance to plan, scheduled for the August 31, 2003. The production mix at Gusab changed slightly between March and August 2003 as they produced more for stock. Successively the order stock decreased and the workers got an opportunity to complete all orders in stock. If they decided to complete these order they were about to have time off with full salary for the rest of the closedown period. However, the workers denied this offer (CE 8.) and continued production according to the scheduled closedown process (CE 9.).

It was also evident, and independently from the critical events, that some people, who were not in positions of formal leadership, took a greater responsibility encouraging their colleagues and tried to manage the day-to-day activities. The informal leadership grew
stronger throughout the closedown process, and legitimized by the workers. Due to the informal leaders’ actions and a unanimous group-decision, workers continued their work. However, the importance of the informal groups diminished and the workers became more individualized throughout the closedown process: “I couldn’t care less anymore […] I do what I want, I say what I want to say and don’t care about so much about the others.” Social activities both at work and outside working-hours diminished and the workers were keen on sticking to specific tasks that decreased the job rotation.

Throughout the closedown process productivity continued to increase. All of the respondents claimed that only minor changes in routines, processes or activities was conducted; rather they tried to work harder as they wanted to leave the organization with pride. In addition, the workers wanted to show Sandvik Steel that the decision was wrong and had hopes for a revised decision why they were more careful on keeping the machines running, even during coffee breaks. The respondents claimed that they took pride in their work and that the informal groups unanimously agreed that it was better to work than sit. As one of the respondents put it: “I am keen on doing a good job […] I have been working here for over 30 years […] it is not an alternative to just sit […] I want to leave this place with my head high.”

Discussion and theoretical implications

As alluded to the outlined case and empirically drawing on the critical events that occurred during the closedown period, here considering the fluctuations in productivity, a schematic figure is outlined:
The schematic figure (3.) in conjunction with figure (2.) can partially describe and to some extent explain fluctuation in productivity during the closedown process. This is somewhat similar to the previous research that has pointed to increased productivity during the closedown process (e.g. Sutton, 1987; Bergman & Wigblad, 1999; Hansson & Wigblad, 2006a, b; Wigblad, Lewer & Hansson, 2007). Similar to these studies, this case study indicates a Closedown effect, through the recorded increased productivity, as outlined in figure (2.). However, the schematic figure (3.) as well as previous research is limited in their ability to analyze and identify links between explanatory factors, rather providing ad hoc and context specific explanations to the increased productivity (c.f. Littler & Hansson, 2005; Hansson & Wigblad, 2006b). Still, and based on the fine-tune analysis this paper advances the understanding of different explanatory factor to the Closedown effect by outlining a theoretical model and distinguishing dependencies between explanatory factors:

Two primary productivity-enhancing effects are identified and supported in the literature; the *human* driving and the *technical* driving effects (e.g. Sutton, 1987; Ichniowski, Shaw & Prennushi, 1997; Bergman & Wigblad, 1999; Brown, Schmitt & Schonberger, 2004; Hansson & Wigblad, 2006a, b). In the closedown literature, it is argued that the primary driver for increased productivity is the human factor, considering factors such as the level of employee
motivation, whereas the technical factor, considering factors such as changes in work-design, represents a secondary driver (e.g. Bergman & Wigblad, 1999; Hansson & Wigblad, 2006a).

A complex of antecedent variables affects the human factor and the level of employee motivation. The degree of conflicts has a positive relationship to the level of employee motivation. I here follow the Cutcher-Gershenfeld (1991) outline of patterns in management-worker relations, identifying that the level of conflicts and speed in conflict resolution and argue for a positive relationship to the employee motivation.

The level of conflicts and speed of conflict resolution co-varies with the workers confidence (or trust) in management. That is, with a high level of conflicts and slow speed of conflict resolution, confidence in management is low, vis-à-vis low level of conflicts and high speed of conflict resolution, confidence in management is higher. As the level of conflicts and speed of conflict resolution fluctuated during the closedown period, so did the confidence in management. Similar to Cutcher-Gershenfeld (1991), the transformation of industrial relations is from an adversarial frame of reference to a frame of reference that is rooted in the transformational setting, here due to the closedown decision and dialectics between management and the workers during the closedown process.

Prior to the closedown decision, conflicts were few and resolved at an average speed. Work was controlled and managed through well-defined policies, procedures and hierarchical decision-making. During the pre-notice period, the level of conflicts and disputes was high due to the preservative and worker-protecting strategy and counter-arguments regarding the closedown decision by the labor union. Consequently, the speed of conflict resolution was low. During the negotiation period, the level of conflicts remained on a high level and the
willingness of resolving conflicts continued to be low. As the countdown period was entered, the level of conflicts decreased and when conflicts arose, they were often resolved in a speedily manner.

Here, the level of confidence (or trust) in management is often dependent on the level of conflict and speed in conflict resolution. A high degree of conflicts and a low speed of conflict resolution negatively affect employee motivation. The critical events of the Gusab closedown process indicate how workers interpreted management actions and decision-making. For example, as the HRM-program was negotiated and later presented, workers were pleased with that deal, conflicts decreased whereas productivity increased. On the other hand, as the negotiations with the potential new customer failed to materialize, the level of conflicts increased and productivity decreased (temporarily).

The level of confidence (or trust) in management plays a significant role. Throughout the closedown process, management and control diminish whereas worker autonomy increases. Increased worker autonomy positively affects both employee motivation and work-design. As outlined by Hansson and Wigblad (2006a, b), management control diminish over time, providing operative space for the workers. With increased operative space, workers tend to initiate changes in work-design and conduct day-to-day rationalizations and develop innovative skills with enhanced employee motivation. Increased operative space for the workers positively affects employee motivation and act as a driver of enhanced performances, whereas worker-initiated changes in work-design positively affect technical enhancements and enhanced productivity.
Previous research has also noted that with diminishing management control over daily operations informal leadership evolve (e.g. Sutton, 1987; Wigblad, Lewer & Hansson, 2007; Hansson & Wigblad, 2006a, b). The evolvement of informal leadership can, but does not have to support the alienation and distance between management and the workers and the reliance on internal hypotheses, prior expectations and the attention to dominant cues (c.f. Staw, Sandelands & Dutton, 1981; Shaw & Barrett-Power, 1997). Rather, with informal leadership comes spontaneous organizing within and among informal groups and enhanced employee motivation due to the newly achieved operative space and decreased levels of formalization.

Similar to the evolvement of informal leadership, informal groups evolve and during the initial phases during the closedown play a significant role (Hansson & Wigblad, 2006a; Wigblad, Lewer & Hansson, 2007). Interpretations of management actions and decision-making is a consequence of not only the single individual worker interpretation but affected by the informal group behavior. Mutual expectations and strong norms for social conducts generate a generally accepted behavior and it is through the sense-making and informal collective agreements (Burawoy, 1979; Hodson, 1991; Hoel & Bael, 2006; Bélanger, Edwards & Wright, 2003). Similar to the findings of Hansson and Wigblad (2006a) this study indicates that informal groups affect the individuals in different directions, intensifying and impairing the behavior, dependent of the situation and the actions and decision that are made. The informal group influenced the individual and determined the dominant level responses that were appropriate or inappropriate for performance.

The importance of informal groups holds a temporary dimension. Individualization grows stronger throughout the closedown process and incitements for employee motivation changes. That is, informal groups are prevalent and plays a significant role in the initial stages of the
closedown process and to a major extent determine the dominant level responses are appropriate or inappropriate for performance. Consequently, individualization grows stronger; workers tend to rely on internal dispositions and reliance on internal hypothesis the cause for their motivation (Staw, Sandelands & Dutton, 1981).

Workers perception of threat of job loss holds a certain explanatory value to the Closedown effect (c.f. Hansson & Wigblad, 2006a). Initially and closely related to the closedown decision the threat of job loss generates certain dynamics and positively affects workers level of confidence (or trust) in management. With increased worker autonomy and increased individualization together with the successive phase-out of employees highlights the threat of job loss the closer single individuals come to their final day at work. The perception of threat of job loss is prevalent from the point of rumors start to evolve and/or decision is formally announced and onwards.

Previous research has focused, to some extent, worker reactions during the closedown process, indicating that workers filter information and managerial actions through a raster represented by the closedown decision (Hardy, 1985, 1987, 1990; Sutton, 1987; Hansson & Wigblad, 2006a, b). From this case, it is evident that worker reactions varies, dependent of the prevalent situation and critical events. That is and exemplifying; positive reactions, such as the hope for prolongation of production, tend to enhance the productivity. Negative reactions, such as when negotiations with the potentially new customer failed to materialize and the definitive closedown decision was announced, tend to decrease the level of productivity. In sum, from the fine-tune analysis it becomes clear that interpretations, reactions and actions of the workers was directly related to the fluctuations in the productivity development.
The perceived threat of job loss positively affects the level of employee motivation. As a consequence of and affection of the level of conflicts and speed of conflict resolution, the perceived level of threat of job loss fluctuates. As indicated in this case study, often and on an aggregated level, worker perceived level of threat of job loss concurs with the fluctuations in productivity.

The antecedent variables to the technical productivity enhancing effect are considered as relatively stable in their explanatory power to the productivity development. Worker initiated changes in work-design due to increased worker autonomy do not necessarily increase over time, rather being stable. Contrary to the arguments by Ichniowski, Shaw and Prennushi (1997) there is no clear evidence in this case study nor in previous research on organizational closedowns that increased up-time and enhanced resource utilization fully (or to a large extent) explain the appearance of the Closedown effect (Sutton, 1987; Brown, Schmitt & Schonberger, 2004, Hansson & Wigblad, 2006a, b; Wigblad, Lever & Hansson, 2007). Rather, worker-initiated changes in work-design partially contribute to increased productivity.

I here outline and identify the dominant explanatory pattern to the Closedown effect providing a theoretical model, based on the fine-tune analysis:
As argued, the Closedown effect is primarily a human driven productivity increase effect. The antecedent variables to the human productivity enhancing effect on the one hand hold a temporal dimension in explanatory power to the productivity development throughout the closedown process. On the other hand, they contribute to explain fluctuations in the productivity development.

Workers interpret management actions and decision making, through a raster represented by the closedown decision, based on their confidence (or trust) in management as well as the perceptions of threat of job loss. Dependent of interpretations, psychological responses become manifested behavioral actions and in the level of conflicts (frequency and speed of conflict resolution). A high degree of conflicts and a low speed of conflict resolution negatively affect employee motivation. The critical events of the Gusab closedown process indicate how workers interpreted management actions and decision-making. For example, as the HRM-program was negotiated, workers became pleased with the deal and conflicts decreased whereas productivity increased subsequently. On the other hand, as the negotiations with the potential new customer failed to materialize the level of conflicts
increased and productivity decreased (temporarily), both indicating the fluctuations in productivity due to workers perceptions.

The level of confidence (or trust) in management plays a critical role during the pre-notice and negotiation periods. Throughout the closedown process, management and control diminish whereas workers autonomy increases. Informal leadership tend to evolve and can, but does not have to support the alienation and distance between management and the workers and the reliance on internal hypotheses, prior expectations and the attention to dominant cues.

Fluctuations in the productivity development are dependent of the interplay between management and workers. During a closedown process, workers tend to become receptive and sensitive to management actions, intensifying vis-à-vis reducing performance, positively affecting the productivity development.

When common concerns are pursued, in terms of scope for formal and informal autonomy, workers can find operative space and conduct worker-initiated changes in work design that positively affect the productivity development.

The outlined theoretical model contributes to the literature on organizational closedowns by advancing an understanding of an inter-relationship among productivity affecting variables. This model takes into account the dynamics that come into play during a closedown process by identifying critical aspects and extending both the empirical and theoretical domains of such research. Still, this study holds its limitations, based on a single-case study, arguing that there is a need for further studies on organizational closedown as, and as previously argued,
the scholarly understanding of the closedown process is still limited, scattered and fragmented.

Arguably, a critical aspect to consider in the development of a theoretical model is to capture the dynamics as well as the influence of exogenous factors for explanation – similar to an open systems approach, and not delimiting the search for endogenous factors and explanations– similar to the closed systems approach (c.f. Scott, 2003).

A proposition is that further studies should aim at analyzing the strength of the relationships and dependencies of variables that come into play during a closedown process in order to explain or understand the factors contributing to the appearance of the Closedown effect. Further, since previous research on organizational closedowns primarily dealt with case-study research there is a need for an application of various types of research methods, such as working with quantitative data, in order to further develop knowledge from closedown research.
Appendix 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of the workers</td>
<td>Average = 46.5 years. &lt;br&gt;Mean = 49 years. δ = 11.3 years</td>
</tr>
<tr>
<td>Years of employment</td>
<td>Average: 20.3 years &lt;br&gt;Mean = 16 years. δ = 13.1 years</td>
</tr>
<tr>
<td>Number of females (total)</td>
<td>20</td>
</tr>
<tr>
<td>Number of males (total)</td>
<td>84</td>
</tr>
<tr>
<td>Number of females (blue collar)</td>
<td>11</td>
</tr>
<tr>
<td>Number of males (blue collar)</td>
<td>76</td>
</tr>
</tbody>
</table>

Table 1 Some short facts on the employees

Appendix 2

<table>
<thead>
<tr>
<th>Informants position</th>
<th>No. of informants</th>
<th>No. of interviews</th>
<th>Total length of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Manager</td>
<td>1</td>
<td>3</td>
<td>5.5 hours</td>
</tr>
<tr>
<td>Labor union representative</td>
<td>1</td>
<td>1</td>
<td>2.25 hours</td>
</tr>
<tr>
<td>Team leaders</td>
<td>2</td>
<td>4</td>
<td>4.33 hours</td>
</tr>
<tr>
<td>Operators (blue-collar)</td>
<td>22</td>
<td>39</td>
<td>53.25 hours</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>47</td>
<td>65.33 hours</td>
</tr>
</tbody>
</table>

Table 2 Informants data
References


Pyrrhic victories – anticipating the closedown effect

Magnus Hansson and Rune Wigblad

Abstract Previous studies with empirical evidence on social responsible driven closedowns have identified a productivity increase effect that occurs during the process of organizational closedowns, known as the closedown effect. Our proposition is that this effect can be anticipated as a consequence of a closedown decision. Encountering four different non social responsible closedown cases, of various durations, we statistically test this proposition. Further, we identify a need for an analytical distinction of the phases of the closedown process, in terms of the primary ‘advanced notice period’ and the secondary ‘countdown period’. Based on the analysis, and with this distinction, we are able to conclude that the productivity increase effect can be anticipated during the countdown period. The comparably longer time frame in the Studding case provides the strongest support for our proposition. From the analysis we suggest hypotheses for further research.

Keywords Decline; closedown; closedown effect; productivity; social responsibility.

Introduction

If we win another such battle against the Romans, we will be completely lost. (Pyrrhus: 318 BC–272 BC)

This paper analyses different types of organizational closedowns and organizational performance during the closedown process. The appearance of unexpected good performance during the closedown process has been reported in some cases, which can be considered as a pyrrhic victory for the workers in relation to the management, as the plant is finally shut down, no matter their efforts.

Research on the broader phenomena of organizational decline, can be considered as consisting of several different streams of studies, dealing with contexts such as downsizing, retrenchment, turnarounds, lay-offs and closedowns. There are some common denominators among the different streams such as a precarious situation for the organization with, for example, decreasing market share, over capacity and organizational restructuring. Also present are differences between the research streams due to their logic, theoretical foundations and research objects (Cameron et al., 1988). Despite the differences, these streams of research can cross-fertilize each other in order to get at deeper understanding of organizational decline.
One stream of literature has focused on multi-plant closure organization (e.g. Arthur, 1994; Becker and Huselid, 1998; Chang and Singh, 1999; Datta et al., 2003; Kirkham et al., 1999; Koch and McGrath, 1996; Youndt et al., 1996). Another stream of literature has focused on sector- and industry-level effects (e.g. Barnard and Jensen, 2002; Carroll, 1984; Colombo and Delmastro, 2001; Dess et al., 1990; Guthrie, 2001; Ichniowski et al., 1997; MacDuffie, 1995; Rocha, 2001; Zatzick and Iverson, 2004). Although we are inspired by research on organizational decline, the focus of this paper is on closedowns and performance in such contexts. However, little research or conceptual work has focused on how the process of organizational closedown unfolds, from single firms’ perspectives (e.g. Bergman and Wigblad, 1999; Brown et al., 2004; Hardy, 1990, 1987, 1985; Harris and Sutton, 1986; Wigblad, 1998), which is the knowledge gap we address. The closedown process is defined as the time-frame starting with the public announcement of the closedown decision to the final shutdown of operations.

There are two principally different ways for management to handle the closedown process. First, management can provide a social responsibility-taking retrenchment programme, taking in to account the demands of the labour union, the workers and their representatives and/or cushioning the impact of the decision, which we will refer to as Social Responsible (SR) closedowns. SR-closedowns support the workers search for alternatives throughout the closedown process. It often involves providing a retrenchment programme, including such components as severance payments, educational and re-training programmes and outplacement assistance (c.f. Barker and Duhaime, 1997; Barker and Mone, 1994; Hardy, 1990, 1985; Robbins, and Pearce, 1992; Sutton and D’Aunno, 1992). Second, management can provide a Non-Social responsibility retrenchment plan in order to manage the successive downsizing, as fast as possible according to technical and business opportunities, towards the final shutdown. A Non-Social responsibility (Non-SR) retrenchment does not consider the demands and requirements of the labour union and the workers. Non-SR closedowns are also without any active support to the employees, neglecting the negative impact of the decision on employees.

Non-SR-closedowns are the dominant pattern in practice (e.g. Brown et al., 2004, Sutton, 1987; Weber and Taylor, 1963). This is because management tends to anticipate a downturn in productivity during the closedown process. We have observed a tendency in some cases by the management, to ex ante calculate productivity decrease during the closedown process as an argument for rapid closedown. Such a calculation was for example made in one case, assuming that the productivity would decrease by 5 per cent during the closedown period. The closedown effect was however present also in that case, with a productivity increase of 4 per cent over the total 2 year closedown period (Bergman and Wigblad, 1999). Based on evidence from this particular case, the concerns management have for a downturn and disruptions in production stability, are likely to occur only in the earliest part of the closedown period.

Contrary to this downturn assumption, it has been suggested by some authors that a productivity increase effect is appearing during the closedown process in SR-closedowns, which will be referred to as the closedown effect (Bergman and Wigblad, 1999). This effect has been observed in cases with relatively long-term closedowns, in a blue-collar context, were management provided a social responsibility taking management approach for handling the closedown process. These studies have reported a pattern where the productivity in some cases decreased shortly, in the beginning of the advance notice period and later recovered and improved (c.f. Bergman and Wigblad, 1999; Lewer, 2001; Hansson, 2004; Wigblad, 1995).
Sutton (1987) studied eight closedown cases in the US with comparably shorter closedown periods, between two weeks and six months, compared with the ones previously discussed. Based on eight cases, Sutton (1987) observed that the performance after the closedown decision was constant or improved, which is similar to earlier observations (Weber and Taylor, 1963). The results reported by Sutton (1987) refer to situations with comparably favourable treatment of human resources – and the absence of antagonistic industrial relations.

We have referred to some evidence that provide arguments that the closedown effect can be expected to appear in SR-closedown cases, as a consequence of the decision to closedown the entire operations in the plant. Based on these previous studies, the closedown effect can be anticipated as a consequence of the closedown decision. This anticipation will also serve as our proposition. Still, no studies have yet explored the productivity development during Non-SR driven management approaches of organizational closedowns. For that reason, we aim to explore; how productivity changes occur during organizational closedowns where there are manifested antagonistic industrial relations, i.e. a Non-SR managerial setting for the closedown. For that reason, we studied four cases of Non-SR-closedowns from their inception and monitored the impact on performance. If the closedown effect does not appear in such contexts, this will be empirical evidence that refutes our proposition. We argue that it is important to encounter Non-SR management cases to explore the range of the empirical domain and extend the understanding for when the closedown effect can be anticipated. We argue that it is not necessary to analyse the causes of a closedown decision to understand when the closedown effect can be anticipated, which is why this study is delimited to focus on the question of how productivity develops during the closedown process at the single-plant level.

This paper contributes by providing an extended understanding of closedown processes and the closedown effect phenomenon. Further, it also contributes to the emerging literature on organizational decline and in particular organizational closedowns. We provide a theoretical discussion and extension on how different managerial approaches, during organizational closedowns, affect the closedown process as well as its outcome in terms of productivity development. Further we provide an analytical scheme for classification of closedown cases, which is supposed to serve as a base for comparative studies and outline suggestions for further research and policy implications.

The remainder of this paper is composed as follows: first, we outline the methodological considerations and the theoretical framework. Then, we portray the cases we encounter. The analysis that follows aims at comparing and discussing the outcomes of the different cases and the paper concludes with a theoretical development, conclusions and policy implications.

**Methodology**

The empirical study of organizational closedowns is more difficult than the study of expansion and growth, as it is difficult to access information, the limited amount of researchable objects, and the fact that the organizations often literally vanish. Only when the researcher is present, it is possible to reconstruct production data from the closedown process period. Repeatable studies are almost impossible to conduct, which is why, instead, comparative studies can both add new information to and validate previous studies (Eisenhardt, 1989).
This study contains of four Non-SR driven closedown cases; the revisited Cabinet Factory case, the Wire Rod case, the Tyre manufacturing case and the Studding case. These cases were selected because of their managerial setting and the fact that it was possible to enter the organizations shortly after the public announcement. In all cases it was necessary to enter the organization while it still was alive, in order to gather prospective data and to be able to follow the process of closedown. Access to the organization was a vital factor. We had the opportunity to act completely freely at the plant-level and gain access both in time, contacts and operational management data in all the cases that we entered.

In all the cases we asked the respondents if they had any written documents about the closedown and if such documents could be accessed for research. A wide range of documents were collected and studied before and after the interviews, complementing the received information. These documents contained information on the retrenchment programme for the closedown, and information to the employees, protocols from meetings and reports from wage-earner consultants, who according to Swedish legislation are allowed to conduct an independent evaluation of the closedown decision and the closedown plan. Experience from previous studies of closedowns (Hardy, 1985; Bergman and Wigblad, 1999) has shown that statistical records on productivity are seldom kept during the closedown period. This was the reason why we asked the local operations management, in all the cases, to maintain production statistics especially for this study, which they did.

In the cases presented below we present production statistics and measurements of productivity. All productivity measures are calculated on output per employee and time unit. We were able to apply this simple measurement as in all cases we obtained both production statistics and statistics about the numbers of employees. The production statistics contained information on output per time unit and the employee statistics contained information on the subsequent downsizing. We did not find any significant market-related restrictions, affecting the possibilities to increase the production rate. We ran a descriptive statistical analysis on the collected production statistics.

We present several figures on productivity development in the different cases. In these figures we present production statistics covering available data of the periods that the organization conducted its measures of productivity. In order to extend the descriptive statistics we have added calculated linear trend lines for the productivity. Applying a calculated adjustment using least square method for a line represented by the equation: \[ Y = mx + b \] (c.f Kleinbaum et al., 1998: 321) (m is the inclination angle and b is the intersection).

Further, we have also applied calculated polynomial trend lines which are based on a calculated adjustment using the least square method of points represented by the following equation: \[ Y = b + c_1x + c_2x^2 + c_3x^3 + c_4x^4 + c_5x^5 + c_6x^6 \] (c.f Hair et al., 1998: 169–74). (b and \( c_1 \ldots c_6 \) are constants).

The analysis of the anticipated closedown effect is based on the statistical test for evaluating parallelism, given by Equation 1 (for derivation, see Appendix 1) (cf. Kleinbaum et al., 1998: 321–3):

\[
T = \frac{\hat{\beta}_{lx} - \hat{\beta}_{ly}}{S_{\hat{\beta}_{lx} - \hat{\beta}_{ly}}}
\] (1)

Formal interviews were held with informants, which were represented by the management, representatives of the labour union, team leaders and production operators. The interviews were tape-recorded and transcribed. The interviews concerning
management positions were sent back to the respondents for their validation and when necessary, completion of facts.

**Conceptual framework**

The majority of the literature on organizational theory is based on an assumption of growth and a minority on organizational decline (Hansson, 2004; Whetten, 1980). After Whetten (1980) called for research on organizational decline, increased attention came to the topic but, from the late 1990s until today, the topic has once again become neglected. The understanding for these phenomena is limited, scattered and multi-theoretical (Brockner et al., 1987). Research on organizational decline can be seen as a subordinate field of research which consists of different streams such as research on downsizing and closedowns.

Organizational closedowns are similar but different to downsizing, as closedowns often, but not necessarily, include a successive downsizing. Both macrolevel and microlevel models have been developed to explain the causes and effects of organizational downsizing (e.g. Brockner et al., 1987; Cameron et al., 1987, 1988; Freeman, 1993; Freeman and Cameron, 1993; Greenhalgh and Rosenblatt, 1984; Greenhalgh et al., 1988; Littler and Innes, 2004; Littler et al., 2003, 1999; Sutton and D’Aunno, 1992; Weitzel and Jonsson, 1989; Zammuto and Cameron, 1985). At the macro level, the most prominent of these models centre around the concepts of convergence and reorientation of organizational strategies (Freeman, 1984; Freeman and Cameron, 1993), while the most prominent microlevel theories have been focused on equity/inequity, of models of layoff-induced stress. Microlevel theories have discussed the ‘survivor syndrome’. Contrary to closedown research related to SR-cases, downsizing research has noted a decline in labour productivity related to the survivor syndrome (e.g. Brockner et al., 1987; Dawkins et al., 1999).

Brockner et al. (1987) argue that two categories of variables have a significant impact on survivors’ reactions to layoffs: first, the extent to which the organization is viewed as having been unfair to the dismissed workers in the layoff process; second, survivors’ prior identification with the layoff victims. It is expected that survivors will react most negatively, with a dysfunctional behaviour, from the organization’s viewpoint – i.e. their work performance and organizational commitment will be low. In addition, the organizational commitment will be lowest when the survivors perceive that the layoff victims were treated relatively unfairly and when survivors had a relatively strong sense of identification, prior to the layoff, with those laid off. The perceived unfair treatment provides an enhanced distancing and withdrawal from the agent. The fairness argument is also present in closedowns. Fairness on the behalf of the workers, in a closedown context, does not only refer to single individuals, but includes the entire workers’ collective.

**On organizational closedowns**

From a literature review on organizational closedowns in SR-cases it has been suggested that the outcome of a closedown process can be dependent on the management’s decision-making actions (Brown et al., 2004; Bergman and Wigblad, 1999; Hansson, 2004; Lewer, 2001). There is, however, a lack of knowledge concerning performance during Non-SR closedown processes.

Previous studies of closedowns where the closedown effect has been recorded, are uniform to the extent that they are characterized by being, in an international comparison, long-term processes with a socially responsible managerial set, as management in all
cases provided retrenchment programmes in order to support the employees. Recent findings of Brown et al. (2004) support this picture and provide an expansion of previous research on single plant closures, including both white and blue-collar workers. A longitudinal data set of a single plant closure identifies variables such as job satisfaction and informal justice as significant effects throughout the closure process. Factors such as climate of trust, operational communication, creativity climate and perceived workload are not significantly recorded effects. The perceived work unit performance is nearly significant for both time and interaction effect. It is further argued that the results of this study provide insights to the underlying behavioural and attitudinal issues of a plant closure. This study indicates that quality, productivity and customer satisfaction remained strongly positive throughout the closure process.

Based on eight US closedown cases with comparably short duration, Sutton (1987) suggested that a common trait in dying organizations seems to be that productivity increases. The latter seems to be a consequence of the decision to closedown. One explanation for this, suggested by Sutton (1987), is that the employees were motivated to increase their efforts in the undermanned organization because it was an interesting challenge to get involved in new tasks. The results reported refer to situations with comparably favourable treatment of human resources, even if the organizations were characterized by severe conflicts over resources – and the absence of antagonistic industrial relations, similar to SR-closedowns. The Sutton (1987) study indicates that it is possible that the closedown effect can appear also in cases with short closedown periods. These studies have, in general, focused on single or a limited range of case studies of blue-collar workers, except from some cases in the Sutton (1987) study.

Classifying closedown cases

The conclusion from Sutton’s (1987) study – which covered: short closedown periods; is similar to SR-cases; and includes SR-components such as severance payments – was that some cases show the closedown effect. Further, researchers have reported the appearance of the closedown effect in long closedown periods, where the management approach also has been socially responsible (Bergman and Wiglad, 1999; Hansson, 2004). On the other hand, the closedown effect has not been reported in any Non-SR cases. There are besides the dichotomous SR and Non-SR approaches, the time frame distinctions to take into account; short, middle-range and long closedown periods. The longer the time frame in respective cases, the stronger is the anticipation test concerning the closedown effect. The literature concerning closedowns provides the classification variables, time-frame and managerial setting. The time-frame is divided in accordance to the length of the closedown process. The short closedown period includes closedowns that last between zero and six months. The middle-range period closedowns last between seven and 12 months and the long period more than 12 months. The managerial setting can, as noted, be of two types; SR and Non-SR. It is in the middle-range and long-term closedown that previous research predominantly has reported the closedown effect. Notably, only a few cases have been identified in the SR and short-term setting (Sutton, 1987). Further, previous research has not provided any results from closedown cases in a Non-SR setting.

The closedown effect in Non-SR driven closedown cases

In this section we discuss closedown cases defined by the classification of their managerial approach to the closedown, as well as the time frame in which the closedown was accomplished. Following the classification scheme we project the cases as follows:
Non-SR driven cases with short countdown periods

We begin this section with an introduction to the Gislaved case that is divided into two cases due to the different time perspective on the closedowns of the tyre manufacturing and the studding departments.

The Gislaved case The closedown of the Continental Gislaved Tyre Manufacturing in Gislaved, Sweden, affected 774 employees, where 656 were blue-collar workers and 118 white-collar workers. In February 2002 the closedown decision was publicly announced by top management and all employees were given notices of termination of employment. Prior to the closedown decision a threat of closedown was prevalent for the entire Gislaved plant. Rumours started to spread in the organization and escalated during January 2002.

Production in Gislaved was divided into two departments; the tyre manufacturing and the studding departments. The closedown of the tyre manufacturing was completed within six months from the initial decision and the studding department was run down another 12 months later and for that reason the units were separated in the closedown process. It was an obvious conflict between management and the workers, which resulted in the workers coming out in collective protest, manifested by a torchlight procession.

The Gislaved Tyre Manufacturing case Tyre manufacturing was the larger unit of the Gislaved plant, employing almost 500 workers. The tyre manufacturing was characterized as being labour intensive and the manufacturing was run in intermittent five shifts. At the Gislaved plant output was estimated on a yearly production of approximate 4 million tyres. The closedown period of the tyre manufacturing unit was scheduled for six months from the announcement of the decision. During the first two of

![Graph](image-url)  
**Figure 1** Planned vs. outcome production development, tyre manufacturing, Jan. 2001 to April 2002
these six months negotiations took place and the countdown period became de facto four months.

Between January 2001 and April 2002, both prior to the final decision of closedown and during the closedown process, productivity was, on average, 39 per cent higher than plan. This indicates that the closedown effect was present during the closedown of the Gislavedy tyre manufacturing.

The productivity measure is based on the total volume of tyres produced per employee for each month. This was the established measurement praxis of productivity in the Gislavedy tyre manufacturing unit. Productivity was calculated on production per machine, as it was one worker per machine. Considering the entire period of measurement and the linear trend of productivity development, an increased productivity of 35.42 per cent is indicated. The sixth order polynomial trend line indicates a stronger productivity development during the closedown period, especially in the very end of the closedown period. It is noted that the measurements during the closedown period only covered three months, with a significant increase with an all-time high in productivity. The mean productivity rate, considering the entire period of measurement was 45.69 ton/hour ($\sigma = 5.84$). During the closedown period the mean productivity rate was 46.53 ton/hour ($\sigma = 7.37$). The test for parallelism indicate a statistically significant closedown effect ($T = 101.0578$).

The productivity development curve refers to the outcome in production per employee during January 2001 to April 2002 and the straight line refers to the planned production. It is evident that productivity throughout the closedown period was higher than planned. Calculating the trend of output for the entire period indicates a positive development, whereas the trend for the closedown period indicates a stronger increase in productivity. During this period no investments in the tyre manufacturing department were made. It was evident from the interviews of the workers that they were keen on doing an excellent job throughout the closedown period, still frustrated with the management.

There was a conflict between management and the workers. Security guards were contracted and patrolled the plant, as the management feared violence and destruction of the production equipment, which caused even more anger and frustration among the workers and the labour union. No violence or destruction took place.

**Non SR-cases with middle-range countdown periods**

The Cabinet Factory case was selected because it was orally reported by production management that they had poor performance during the advance notice period. The Cabinet Factory case has previously been presented in Bergman and Wigblad (1999) and is here revisited and explored in more depth.

**The Cabinet Factory case** The Cabinet Factory was the most profitable unit in the corporation. The closedown decision was, therefore, questioned by the workers of the plant when it was publicly announced in the end of February 1996. The closedown period of the Cabinet Factory was characterized by severe conflicts between management and the workers. From the public announcement negotiations continued for 7.5 months. After they were completed the countdown period became, de facto, one month.

It was a non-SR management decision to closedown – whatever arguments put forward by the local stakeholders, trade unions and local management, they were rejected. The decision was based on a restructuring plan where the production capacity of the Cabinet Factory was to be relocated to a remotely located production unit in the
Statistics concerning the productivity rate was collected retrospectively and is illustrated as a decline in productivity:

Changes in order intake have been taken into consideration and the productivity curve has been adjusted accordingly. This adjustment was approved by the local management. In addition, during week 27 1995 and week 21 1996 the plant was closed for maintenance, thus a calculated mean on the previous six weeks represents the value of these points. This is because the maintenance is considered as an extra ordinary event. Productivity of the total number of doors produced decreased by 51.11 per cent in the period prior the closedown decision. The main explanation for that is the shutdown of selected production equipment during the closedown period, which started in week 24. During the closedown period, productivity decreased by 9.46 per cent. Productivity of doors per 10 employees decreased by 27.41 per cent and during the closedown period productivity decreased by 18.18 per cent. The test for parallelism indicate a statistically significant closedown effect to the extent that the productivity development was recovered during the very end of the closedown period (T = −1530.98). The other measurement (doors/10 employees), did not reveal a statistically significant Closedown effect (T = 40.6908).

The negotiations lasted between events 1 and 5 indicated in Figure 2. The first event was the public announcement of the closedown decision based on a calculation, which triggered a substantial downturn in productivity. The second event was the trade union decision to hire a wage-earners’ consultant to prepare an independent evaluation of the

![Figure 2](image-url)  
**Figure 2** Statistics concerning the closedown performance in the Cabinet Factory. The vertical line indicates the public announcement of the closedown decision.
closedown decision and the closedown plan. This provided new hope to the workers since it was a common viewpoint that the management calculation was poor. The third event was a local negotiation when the management totally ignored the wage earners’ consultant and bogged down the local negotiations, demanding a central negotiation. Management did not accept the trade-union proposition concerning a bonus payment during the advance notice period. Shortly after that, the central negotiation was finalized without any management concessions concerning severance pay to workers. The fourth event was the time when management decided to make minimal efforts concerning a bonus payment during the advance notice period. At the fifth event the relocation of production equipment had started on the shop floor and management rejected a proposition to pay for employee’s further education into new jobs. There was a long period of uncertainty for the employees during this advance notice period and they reacted on perceived management hostility with drops in productivity. When negotiations were finalized after the fifth event, and a new period started, with poor result on the behalf of employees and local trade unions, productivity actually recovered a little bit for a short period of time, prior to the termination of operations. This recovery is notable, since it appears at the same time as the transfer of production equipment produces some muddle in the production.

This final productivity recovery period was comparably very short and, because of that, no real evidence could be submitted concerning the closedown effect. If operations contrafactually would have lasted longer, we can not exclude the appearance of a stronger closedown effect. To evaluate productivity during longer closedowns, we first turn to a case with slightly longer duration.

The Wire Rod case The Fundia Steel Wire Rod case was a plant producing reinforcement rods in Smedjebacken, Sweden, which was hit by a closedown in 1999. Prior to the public announcement, the Fundia Group conducted an investigation due to a downturn in the business cycle and publicly presented a report on 16 October 1998 on the consequences of a concentration of the rod bar production to a plant in Norway. The closedown period of the Wire Rod Mill was seven months. During the first three of this seven months negotiations took place and the countdown period became, de facto, four months. A new structural alternative was proposed – to closedown the Smedjebacken production capacity and transfer the tonnage to the Norwegian plant. The Norwegian plant’s production rate was approximately 58 ton/hour due to an investment made in 1996. This could be compared to the Smedjebacken plant with its production rate of approximately 44 ton/hour.

The closedown was defined by the researchers as a somewhat Non-SR case, because the local trade union, with the help of a wage earner consultant, presented an economically viable alternative to top management calculations. New alternatives were calculated based on prolonged operations in the Smedjebacken plant. One of the alternatives that was found viable was to closedown the fifth shift in the Norwegian plant. This plant was operating on an intermittent five shift system, which is a form of continuous operations system including operations on major holidays.

This second and new alternative was based on the fact that a closedown of the fifth shift in Norway would reduce the amount of hours by 24 hours/week in the Norwegian plant. Although the production rate was higher in Norway, the 40 hours/week production in the Smedjebacken plant’s last shift with a lower production rate, results in a lower productivity in the Norwegian plant.

The conclusion from the wage earners’ consultancy report was that the last shift in Smedjebacken was less unprofitable compared to the fifth shift in Mo. Despite this wage
earners’ report, the closedown decision was made by the Fundia board. Management produced a new counter-arguing report (January 1999). This report claimed that the average production rate that should be calculated would be 38 ton/hour in Smedjebacken during the closedown period, spring 1999. This figure that was based on extraordinary budget/planned production during the closedown period – ex ante, and not based on historical production data – ex post. A new production programme had been allotted to Smedjebacken during the closedown period, which was estimated to slow down the speed of production from 44 ton/hour to 38 ton/hour. This was due to high volumes of the slower production assortment (increased amount of 8mm wire rods), a production specially designated to the Smedjebacken plant during the closedown period.

The new management report (January 1999) concluded that the fifth shift in Mo was more profitable, compared to the last shift in Smedjebacken, assumed to produce 38 ton/hour. The final decision after negotiations, to closedown operations in the wire rod mill in Smedjebacken, was made in the very end of January 1999 and operation was terminated in June 1999. The strong position of the wage earners’ report and the alternative calculation, however, provided the local trade union with a bargaining position and the workers received bonus and severance payment, which makes this closedown case somewhat closer to a SR-case in this respect, but it would not be legitimate to claim that it was an SR-closedown.

The new assortment of wire rod production was estimated to bring a production rate of 38 ton/hour. The mean production rate was 50 ton/hour during the last five months, compared to the mean 44 ton/hour based on an ordinary production assortment and budget 38 ton/hour based on the specific designated production assortment (see Figure 3). The most accurate comparison is to be made with the 38 ton/hour. These figures are based on the same number of employees in the production during the period July 1998 to June 1999 and are, therefore, corresponding to productivity estimations during that period. The test for parallelism indicate a statistically significant closedown effect (T = 26.532).

Comparing the two cases presented reveals that they are operating in different sectors, where the wire rod case is process production and where productivity is highly dependent on technology. There was not a total rejection concerning human resource concessions in the wire rod case, which makes it a case with a conflict, but not a typical Non-SR case. We, therefore, turn to another distinct Non–SR case, with a longer duration of the closedown period.

**Non SR-cases with long countdown periods**

How can we find cases with long countdown periods when management commit to Non-SR closedowns and consequently pursue a rapid closedown? We have to search for odd situations to find empirical information and cases that meet the conditions for Non-SR closedowns and prolonged timetables.

**The Gislaed Studding case**  The studding department was run-down within 18 months, which can be considered as a comparably long period. The closedown period of the studding department was scheduled for 18 months from the announcement of the decision. During the first two of these 18 months negotiations took place and the countdown period became, de facto, 16 months. The studding department measured the number of studded tyres and was dependent on the tyre manufacturing department and imports from other production units. It is notable that no restrictions were put on the studding department regarding production volume (see Figure 4).
The productivity measure of the studding department is based on constant staffing (as employees were transferred from tyre manufacturing when employees were absent) and the utilization of the total production equipment. As the productivity of the studding department fluctuated, due to seasonal variation and production planning, and should be considered as cyclic, there is a need for a parallel analysis of two distinctive periods. The first interception is set to weeks 1 to 29 and the second to weeks 33 to 52. This is because an annual vacation is scheduled between weeks 30 and 32. For that reason we conduct a subgroup analysis considering the period prior the closedown decision and the period after the closedown decision. This subgroup analysis shows that during the first intercept there was an improved productivity rise between 2000 and 2003 of 85.48 per cent, the second intercept a slight increase of 3.53 per cent and when considering the total an increase of 31.23 per cent. (For detailed data, see Appendix 2.) The test for parallelism indicates a statistically significant closedown effect ($T = 6510.466$).

The productivity development of the studding department includes the development of the years 2000–3. Between week two 2002 throughout 2003, the closedown was run for the studding department. Comparing the outcomes for the different years provide an, at first sight, contradictory picture to what was argued previously, as the productivity development during closedown is somewhat weaker both compared to the advance-notice period as well as during the period when no decision was made on closedown. The layout of the trend lines follows the same layout as for the referring curves. Productivity development fluctuated throughout the entire period and the polynomial trend line shows
an even stronger increase during the last part of the closedown period. Still, productivity continued to increase throughout the entire closedown period.

Considering specific periods, and in this case separate weeks, productivity fluctuates due to the planning and seasonal variations and the productivity development can be seen to drop and later recover. However, considering the entire period provides a picture where the productivity has increased.

Analysis

The first observation from the empirical study and in accordance with the proposed classification scheme is that the time frame for the closedown process is important. In order to be able to analyse the closedown process a conceptual clarification is needed, concerning the closedown process. The reason for this is that we have identified different patterns of behaviour in the cases considered. It has been noted that the negotiation periods from the public announcement to the definitive decision has varied between the cases. For that reason it becomes necessary to distinguish between the period of negotiations and the run-down period thereafter.

The initial period is determinant of uncertainty regarding the final closedown decision. In the second period there is an awareness and clarity regarding the outcome of the decision. In Sweden, the public announcement is followed by a period of negotiation with the trade unions. In at least three countries – UK, Germany and Sweden – management must give advance notice and other public concessions to the employees, prior to the shutdown of operations. The initial period after the public announcement, over negotiations, up to point where the formal decision is made at the board of directors, will be defined as the Advance notice period, prior to the shutdown. This period is followed by the second period, i.e. the Countdown period, after the negotiations have been finalized and the formal decision is made to the shutdown. The Advanced notice together with the Countdown periods together makes the Closedown period. Usually, the – legislatively regulated – closedown periods are between three months and half a year in the countries mentioned. The US lacks mandatory legislation in this area. However, legislation is not the major point in this paper. As a consequence of this analytical
Table 1 Analytical scheme

<table>
<thead>
<tr>
<th></th>
<th>Short term (0–6 months)</th>
<th>Middle-range (7–12 months)</th>
<th>Long-term (&gt; 12 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advanced notice period</td>
<td>Countdown period</td>
<td>Advanced notice period</td>
</tr>
<tr>
<td>SR driven closedowns</td>
<td>Fundia</td>
<td>Fundia</td>
<td>Fundia</td>
</tr>
<tr>
<td>Strategic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-SR and Tactic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR driven closedown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-SR driven</td>
<td>Gislaved Tyre</td>
<td>Gislaved Tyre Manuf.</td>
<td>3 months Cabinet Factory</td>
</tr>
<tr>
<td>closedown</td>
<td>2 months</td>
<td>4 months</td>
<td>4 months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

distinction between the Advance notice period and Countdown period, we have added these categories into each time frame in Tables 1 and 2.

The second observation from the four new cases reported here, is that they are not all clear cut Non-SR cases. In order to be able to make a proper analysis we need to distinguish between SR at the strategic and tactical levels. In the Fundia Wire Rod case top management was acting opportunistically, i.e. Non-SR, on the strategic level, pursuing the closedown despite new facts presented by the trade unions. But on the operational level they committed to human resource programmes for the employees. The Cabinet Factory case, on the other hand, was a clear cut Non-SR case both on the strategic and the tactical levels. The consequence of this distinction is that we have added a new intermediary category, i.e. Non-SR Strategic and SR Tactic, into Table 1. There was not a total rejection concerning human resource concessions in the Wire Rod case, which makes it a case with conflict on the strategic level but non-conflict on the tactical level.

As noted during the case discussions; during the Advanced notice period productivity tends to decrease, whereas during the Countdown period it increases. There has been an increase or recovery in the productivity development, nearing the end of the Closedown period, i.e. during the Countdown period.

The Cabinet Factory case differs from the other cases, to the extent that there was a continuous decrease in productivity development, measured as a linear trend of the total period. However, during the very last minute of the Closedown period there was a recovery in this decrease, and a relative improvement of productivity. A reason for this is the comparably long Advance notice period and short Countdown period. The Advance notice period in the Cabinet Factory case was characterized by repeating conflicts between management and the workers.

Comparing the Cabinet Factory case with the Wire Rod case reveals that they are operating in different sectors. The Wire Rod case is process production, where productivity is highly dependent on technology. Comparing the Cabinet Factory with the
Table 2 Summary of productivity development (ANP = Advance notice period, CDP = Countdown period)

<table>
<thead>
<tr>
<th>Case</th>
<th>Type of trend</th>
<th>Productivity or quality $\Delta$ (%)</th>
<th>Mean production</th>
<th>Standard deviation</th>
<th>Mean productivity ANP</th>
<th>Length ANP</th>
<th>Mean productivity CDP</th>
<th>Length CDP</th>
<th>Test of parallelism</th>
<th>Significant closedown effect ($p=0.05$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gislaved Tyre Manufacturing</td>
<td>Linear (1000 tyres)</td>
<td>35.42</td>
<td>284.50</td>
<td>47.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>101.0578</td>
</tr>
<tr>
<td>Closedown period</td>
<td>Linear (1000 tyres)</td>
<td>148.00</td>
<td>354.33</td>
<td>60.80</td>
<td>327.00</td>
<td>2</td>
<td>354.33</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Cabinet Factory</td>
<td>Linear (doors/10 employees)</td>
<td>$-27.41$</td>
<td>116.90</td>
<td>25.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Closedown period</td>
<td>Linear (doors/10 employees)</td>
<td>$-18.18$</td>
<td>104.52</td>
<td>25.27</td>
<td>104.12</td>
<td>7.5</td>
<td>107.25</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Wire Rod</td>
<td>Linear (ton/hour)</td>
<td>47.22</td>
<td>45.69</td>
<td>5.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26.5320</td>
</tr>
<tr>
<td>Closedown period</td>
<td>Linear (ton/hour)</td>
<td>48.64</td>
<td>46.53</td>
<td>7.37</td>
<td>41.10</td>
<td>3</td>
<td>50.88</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gislaved Studding</td>
<td>Linear (total studded tyres)</td>
<td>78.26</td>
<td>3204.30</td>
<td>1779.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6510.4660</td>
</tr>
<tr>
<td>Closedown period</td>
<td>Linear (total studded tyres)</td>
<td>64.81</td>
<td>3760.84</td>
<td>1510.94</td>
<td>2491.02</td>
<td>2</td>
<td>3724.00</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Gislaved cases is therefore more relevant, where piece-rate related productivity and both a short and a long duration of the Closedown period can be studied. The comparison between the piece-rate and labour intensive production systems, during the closedown period, in the Cabinet Factory case and the Gislaved cases, reveals that productivity can stay on a high level during a long Countdown period, when all negotiations are set.

What happens in cases of short term Non-SR closedown during the Advance notice period is that the potential for a Closedown effect is disrupted by felt unfairness and actions to put ‘pressure on the negotiations’ on the shop floor. The fine-tuning analysis of the Cabinet Factory shows that the causes for this can strongly be related to distinct events when hope fades away on the shop floor, due to the Non-SR managerial setting. When there are no more disappointments and uncertainty possible on the shop floor, in the very end of the Closedown period, there are signs of a productivity recovery.

Conclusions

As noted earlier, previous studies indicate that the closedown effect can be anticipated as a consequence of the closedown decision. However, this evidence has never been tested in Non-SR cases. A conclusion based on four encountered Non-SR cases is that our proposition concerning the closedown effect to appear in Non-SR cases, is supported during the Countdown period and can serve as a hypothesis for future research. The comparably longer time frame in the Studding case provides the strongest support for our proposition. In addition, the test of parallelism that was carried out in order to test statistically the significance of the Closedown effect, shows that in three out of the four measurements carried out, the closedown effect was statistically significant. It was only the aggregated measurement of the Cabinet Factory case that failed to be statistically significant, during a comparably long Advance notice period and short Countdown period. More research is needed in order to validate the generalization of the closedown effect.

The anticipation of a closedown effect phenomenon more generally, is strengthened with these attempts to refute the proposition that the Closedown effect does appear also in Non-SR cases. The researchers and practitioners involved actually did not know about the outcome when the investigation started. The cases also represent different production sectors which suggest that this factor is of minor importance. In none of the cases did investments play an essential role, which is why we conclude that the closedown effect is mainly a social-psychological driven productivity increase effect.

Based on the analysis we conclude that in manufacturing industry closedown cases, management can anticipate the closedown effect to appear during the Countdown period, but not during the Advance notice period, due to uncertainty among the workers regarding the outcome. The empirical evidence indicates that when management is applying a Non-SR setting, a sharp downturn in productivity development will be evident during the ANP. On the other hand, previous research has indicated that when applying an SR setting there will be a minor drop in productivity development during the ANP. In the four cases there was a downturn in productivity during the ANP, and a recovery during the CDP. In such cases, it is plausible to anticipate that productivity is increasing if the Closedown process is prolonged. More research is needed to find possible causes and explanations to why the Closedown effect with such robustness appears in SR-cases on the one hand and in Non-SR cases on the other hand.

The downturn in productivity during the Advance notice period noted in the cases, can hypothetically be attributed to the fact that the potential for a closedown effect is disrupted by the experienced unfairness and actions to put pressure on the negotiations on
the shop-floor. The fine-tuning analysis of the Cabinet Factory indicates that distinct events, when hope fades away on the shop-floor, are due to the Non-SR setting. The other cases show a continuous increased productivity throughout the Countdown period. The comparably longer time-frame in the Studding case provides the strongest support for our proposition. The common pattern in all our Non-SR cases generates a hypothetical conclusion that both frustration, uncertainty of the outcome and the will to influence the negotiations, is disrupting the closedown effect, during the ANP. More research is needed on the disruptions and causal explanations of the closedown effect.

Policy implications

Managers have heard witness that a closedown decision is the most difficult decision to make. Managers often lack experience from previous closedown situations. For that reason our empirical results can serve as an important contribution to the understanding of how closedown processes tends to unfold.

Although each closedown case has a unique set of conditions, it is often a mistake by top management, from an operations management point of view, to close plants too rapidly. A rapid closedown can often cause severe damages in the production flow, when operations are relocated, and can also create counteractions on the shop floor, disrupting productivity. Further, both technical and market conditions often limit the possible speed with which a plant closure can be carried out. Complex production processes may require long closedown periods to prevent disruptions, when both technical skills and tacit knowledge is prevalent. Sometimes management is sensitive not to impair customer relations and depreciate the company’s reputation on the market. In all these abovementioned cases it is important to take our research results into consideration as empirical evidence. The anticipation of the closedown effect makes it possible to plan for prolonged Countdown periods without disruptions and/or performance downturns.

As we observed in the beginning of this paper there is a tendency by the management to anticipate a decrease in productivity during the closedown process. Our reported Non-SR cases in this paper on the contrary, bear witness of a tendency of increased productivity, but only during the Countdown period, which is a strong argument in favour of prolonged closedown periods. Disruptions in production stability and performance are likely to occur only in the Advance notice period and if workgroups feel that they are treated unfairly.

References


Appendix 1

The analysis of the anticipated closedown effect is based on the statistical test for evaluating parallelism, given by Equation 1: (cf. Kleinbaum et al., 1998: 321–3):

\[
T = \frac{\hat{\beta}_{1x} - \hat{\beta}_{1y}}{S_{\hat{\beta}_{1x} - \hat{\beta}_{1y}}}
\]

where:

- \( \hat{\beta}_{1x} \) = Least-squares estimate of the slope \( \beta_{1x} \) using the \( n_x \) observations (for the period prior the closedown decision).
- \( \hat{\beta}_{1y} \) = Least-squares estimate of the slope \( \beta_{1y} \) using the \( n_y \) observations (for the closedown period).
- \( S_{\hat{\beta}_{1x} - \hat{\beta}_{1y}} \) = Estimate of the standard deviation of the estimated difference between slopes \( (\hat{\beta}_{1x} - \hat{\beta}_{1y}) \). This standard deviation involves pooling and summing the estimated variances of the slopes of the fitted regression lines. It is equal to the square root of the following variance:

\[
S^2 = S^2_{P.Y|x} \left[ \frac{1}{(n_x - 1)S^2_{a_x}} + \frac{1}{(n_y - 1)S^2_{a_y}} \right]
\]

where

\[
S^2_{P.alb} = \frac{[(n_x - 2)S^2_{P.alb_x} + (n_y - 2)S^2_{P.alb_y}]}{n_x + n_y - 4}
\]

is a pooled estimate of \( \sigma^2 \) based on combining residual mean-square errors for the period prior the closedown decision and the period after the closedown decision.
### Appendix 2

#### Table 3 Comparative analysis – the studding department

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<th>2000</th>
<th>2001</th>
<th>Δ (%)</th>
<th>2002</th>
<th>Δ (%)</th>
<th>2003</th>
<th>Δ (%)</th>
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<tr>
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<td>3191.97</td>
<td>18.08</td>
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<td>956.92</td>
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<td>Average</td>
<td>4834.84</td>
<td>5106.32</td>
<td>5.62</td>
<td>4911.49</td>
<td>−3.82</td>
<td>5005.7</td>
<td>1.92</td>
<td>3.53</td>
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<td>848.24</td>
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<td>Average</td>
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<td>1388.81</td>
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</table>
A holistic approach to the productivity paradox

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Abstract. Both the public and private sectors have since the 1980s relentlessly cut the size of their workforces. The downsizing has regularly been reported to lead to closure of a whole or a part of a corporation or organization. Some studies which have analyzed the closures have reported that remarkable, counterintuitive improvements in labor productivity occurred during the time-period between the closure announcement and the final working day. Testing an elaborated cybernetic model on a Swedish case study, and on an exploratory basis, this paper proposes a holistic approach to generate a better understanding of this phenomenon. The main holistic pattern is a new order where management control is replaced by more “Self-management” on the plant level, and very strong psychological reactions based on feelings of unfairness.

Keywords: Closedown, cybernetics, downsizing, industrial relations, productivity

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1. Introduction

Edith Penrose’s book, the Theory of the Growth of the Firm [46] first published in 1959, captured much of the post World War II optimism of abundant, even limitless economic growth. In her analysis, few constraints were obvious, except, predominately, managers’ capabilities to cope with uncertainty and risk. Such growth was underpinned by a social contract between capital and labour which secured increasing incomes and job security. White collar employees could realistically anticipate lifetime employment and, for blue collar employees, layoffs would occur only as a last resort to accommodate temporary cyclical downturns [49,53]. Generally organizations hoarded labour [20]. However, and commencing largely in the 1980s, an unabated wave of job losses, or “downsizing” has occurred as both private and public sectors relentlessly reduced the size of their workforces. Despite the evidence of Cascio, Young and Morris [21] and other dissenters who have extensively challenged the claim of performance improvements derived from downsizing, it still dominates much of the change in contemporary organizations. McKinley, Mone and Barker [40, p. 2] showed that in the USA during the mid-1990s, large companies were still reducing their “headcounts” by at least 5 per cent per annum (or at least twice the rate in the 1970s) finding that “downsizing is implemented in profitable organizations that do not face actual or impending revenue declines”. Herein lies the historical break of downsizing from the layoffs and closedsown of the past; organizations cut jobs often in spite of profitable operations, improving or stable demand for their products and services and commonly in the absence of any apparent economic crises.

Under downsizing, firms and government agencies have rationalized activities, restructured, outsourced, shifted activities offshore and intensified worker effort sometimes, but not always, through productivity bargaining. Often, downsizing is directly focused solely on cost cutting, typically pursued by workforce reductions and the curtailment of investments in, for example, new production equipment. At its most extreme downsizing occurs when a production or service unit is closed, such as a hospital, mining operation, administrative section, transport facility or factory [5,55, p. 302]. The common feature of all closure events, irrespective of the type of the unit being closed, is that a temporary organization is created out of the previously permanent organization. This fundamentally reorders the organization’s pre-existing social relations.

Closures are widespread. For example, in Australia, at least 30,000 businesses close annually and, as a consequence, 100,000 plus workers are retrenched [3,4]. US data for the year 2002 reported 302,979 workers were displaced as a result of 1,178 permanent worksite closures [19]. In Sweden 12,191 full time employees (representing 19.8 per cent of all retrenchments) were displaced in 611 closures 2004 [51].

Job loss through downsizing and closure has severe adverse consequences on the displaced workers; most retrenched employees face periods of extended unemployment and often marginalized jobs at substantially reduced earnings [20]. A litany of personal negative effects, too, is commonly experienced by displaced workers; “shock, disbelief, anger, hurt, sense of powerlessness, loss of confidence and self-esteem” [56, p. 189]. Also, the burgeoning downsizing literature generally concludes that workers experience a changed and weakened psychological contract with their employer [48]. Disturbed by retrenchments, employees typically manifest their concerns in a raft of negative behaviors; reduced organizational commitment, skepticism, resistance to change, increased stress, lower productivity, poorer safety and a reluctance to facilitate innovation which is often referred to as the ‘survivor syndrome’ [c.f., 7–15,22,27,34–39]. Contrary to this concept, this paper explores a phenomenon called the “Closedown effect”, with increased productivity during the closedown period [6,23–25].

Given the considerable impact closures have on employees, what performance levels should management anticipate from its workforce during the closedown period? That is from the time the announcement of the closure decision to the workforce and other stakeholders, until the operation’s final day. Very few studies have been published which directly address this issue, which is odd given the extent and profundity of plant closures. Indeed as Sutton [50, p. 542] argued that much has been written about why organizations “die” but in contrast, little research or conceptual work focuses on how the process of organizational “death” unfolds. This paper addresses the question how performance changes during the closedown process and discusses possible explanations for these changes.

Managers who have planned closures have reported that they expected productivity would fall because workers, their collective agencies and possibly the wider community are dealing with resentment, future uncertainty and concerns over job loss [24,25,30]. However, contrary to these expectations, strong counterintuitive improvements in productivity have been
recorded in some cases during the closedown period. Bergman and Wigblad [6] refer to this “unexpected, puzzling social phenomenon” as the “Closedown effect”, for which a final explanation, they surmised, was yet to be found.

Defined, the Closedown effect occurs when, without any change to capital investment, a productivity increase is observed during the closedown period. It is recognized that labor productivity is difficult to define and to measure in all contexts, which adds complexity in the determination of the existence and extent of the Closedown effect. However, to be consistent with the reported case studies discussed later, productivity is taken as the firm’s output volume per employee. This is also a practice based measure which makes comparisons before and after the announcement of closure decision, accurate. Additionally, any measurement of productivity, especially in manufacturing organizations, must be cautious of changes due to alterations in the number of product lines, product assortment and downtime due to maintenance [25].

The purpose of this paper is to propose and test a holistic approach to analyzing the closedown effect, as an alternative to the mainstream explanations which rely on an analysis of single cause-effect relations. We propose a dynamic model to better understand the phenomenon of enhanced labor productivity experienced during closures. The first section describes the key phases involved in closure events and briefly explains the range of management interventions which may be offered to ameliorate against the negative consequences of the shut down. Drawing on the review of the limited number of published studies in the second part, and using Buckley’s [17] model of collective action and institutional structure, the third part seeks to synthesize these largely disparate studies. Using and extending a case study of the closure of a steel manufacturing plant in Sweden by Hansson and Wigblad [25] we assess the utility of the model.

2. Phases and management interventions in the closure processes

Closedown periods can range significantly both in terms of the notice given and the degree of predictability of the announcement. Minimum notice requirements can be prescribed by statutory and other regulations. Under the US Worker Adjustment and Retraining Notification Act (WARN) employers with 100 employees (or the equivalent) are generally required to provide 60 days’ notice of large-scale retrenchments. Australia’s Workplace Relations Act prescribes notification obligations on employers and sets minimum redundancy entitlements. In Sweden, the Act of Co-determination at Work requires that the County Labor Board be notified of cutbacks which affect at least 25 employees. This Board and the local trade unions are to be notified 5–6 months in advance. Trade unions in Sweden also have rights to engage a Wage Earner Consultant who has the power to investigate and report on management’s decision. The report may incorporate alternatives to closure. Actual closedown periods, world wide, can range from a few days, particularly for those small organizations beyond the reach of statutory requirements, to very extensive periods. When, for example, a steelworks in Newcastle, Australia was closed, the amount of notice given by the firm was two and a half years [30].

After the public announcement a closure, negotiations can occur in which the workforce and unions seek to resist the closure and/or achieve redundancy and other benefits from the employer. Hansson and Wigblad [25] define this negotiation phase as the advance notice period. When it is finalized, which again varies between cases, the end of the closedown period is defined as the countdown period (ibid.). Combined, the advanced notice and countdown periods form the closedown period.

Apart from the differing amounts of time from the announcement of the closure until the final day, it is also useful to differentiate between closures using as a criterion the extent of management assistance made available to the workforce and, sometimes, the wider community. It is possible to construct a continuum with at one extreme extensive, well-resourced adjustment and redundancy support programs and, at the other extreme, the minimum legal entitlements. Hansson and Wigblad [25] label these opposite poles as “socially” and “non-socially-responsible”.

2.1. The Closedown effect: possible explanations from the reported cases

A vast minority of reports focus on how the process of organizational closedown unfolds. No theoretical analysis which integrates the differing accounts for the productivity improvements in the closing organization has yet been published. Proposed explanations for the Closedown effect specifically, are ad hoc. Some focus on workers’ psychological response viz.; workers in closure contexts are motivated to set free previously
held back performances because of a heightened pride in their job, a need to show that management made the wrong decision, a belief that the life of the plant may be prolonged and a concern that they will receive ideal references to assist with their search for future employment [6,16,23,25,50]. Designed to act as a psychological incentive, bonus systems based on output and additional payments made at the time of the closure have been noted in some cases [30,61].

Bergman and Wigblad [6, p. 348] considered these explanations of the Closedown effect as too psychologically focused. Analyzing the causes of Closedown effects solely on the employees’ “mental states is not satisfying […]”. Collective actions in declining organizations obviously have social aspects related to the context in which they take place which must be considered in any serious explanation”. Their research does not dismiss the explanatory power of workers’ (socio-psychological) reactions outright though; accepting that falls in productivity after a closure is announced may be recovered when the initial anxiety, stress and anger are lowered. Furthermore it does not matter as much if the factory is run down without maintenance, and the plant usually is destined for a changed assortment to be produced during the countdown period. In the Hammar Glass-Mill case Wigblad [59, pp. 103–104] reported that his interviewees spoke of the “old pride in the craftsmanship in the plant”, of the “unity” and “good spirit” in the company town, “self-esteem to perform reasonably well” and of few workers feeling the need for “revenge”. However, Bergman and Wigblad [6, p. 365] have also argued that the labour process, the degree of management support in overseeing the closure and the actors’ past and present experiences need to be strongly factored into any explanation.

Empirical work by Bergman and Wigblad [6]; Lewer [30]; Brown et al. [16]; Hansson [23]; Hansson and Wigblad [25] showed that a changing frontier of control between labour and management in the altered conditions brought about by the closure announcement, facilitated more productive work conditions. In effect, managers “retreat” from the field thereby providing greater autonomy to the workforce. Sometimes this is necessitated as workers leave and are not replaced during the closedown period. This provides opportunities for the development of innovative skills, extension of job-sharing arrangements, improved informal leadership and self-organizing work groups, while planning is deployed to the lower levels in the hierarchy. Significantly less formalized work patterns commonly emerge.

Most studies have involved manufacturing firms where there has been a strong worker collective and often a socially responsible managerial response to the closure. Here, explanations of the closedown effect have been found in context-specific dimensions such as “best practice” management [16], and “excellent” retrenchment programs involving retraining opportunities, early retirement programs, job search aid, severance payments and bonus programs [6,23,30,58,59]. The Closedown effect has also been observed in non-socially-responsible cases [26,27,50]. Hansson and Wigblad [25] have published research of four non-socially responsible closedown cases which demonstrated that after an initial downturn in productivity during the advance notice period, subsequently upturned in the countdown period. For obvious reasons there are no capital investments in closedown factories. Influence on productivity from investments can therefore be excluded.

3. Framework

Overall, it is clear from the research outlined in the preceding section that the Closedown effect is a complex social phenomenon – a phenomena where productivity improvements are not a function of changes in investments. The closedown effect which occurs under a variety of conditions and operates across an interlinked set of individual, group, organizational and institutional dimensions. Plus, the interaction between these elements is dynamic, i.e., changing during all the phases of the closure. As stated in the introduction, this paper proposes a more holistic approach to the Closedown effect as an alternative to the single cause-effect relations informing earlier explanations.

When looking for a model or theory that is truly socio-cultural and capable of analyzing conflict related contexts like the closedown, we note that the dominant theoretical perspectives are referred to variously as equilibrium, consensus or functional theory. The classical idea of Pareto which typically underpins these perspectives is of an optimum whereby the “system” may be in a state of “equilibrium”. The Pareto idea of society as a “system” of interrelated parts operating with defined boundaries that typically tends to equilibrium, was expounded by Bukharin [18], Sorokin [47], Znaniecki [62], and Lewin [31–33], among others. Furthermore the common denominator in the functionalist system models is the stipulated idea of equilibrium. This idea dominates the work of influential sociologists
like Parsons [43–45] and Homans [28,29] and concerns “checks and balances”, “countervailing power” and “inertia”.

In contrast to these traditions, some cybernetic thinkers take the appearance of disequilibrium as the analytical focus, seeing equilibrium as a temporary state. An open system in the cybernetic tradition is here defined as having “disequilibrating” capacity or, to use Buckley’s metaphor, they are “negentropic”. The metaphor “entropy” comes from natural science and is connected to the second law of thermodynamics. The point made is that open social systems tend to increase in entropy [17], i.e., they are tending towards disequilibrium. Instead of focusing on single cause-effect relations, cybernetics has developed holistic feedback models which link structure to dynamic events which, in turn, further change the structure [1,2,17,52,54,57]. For instance, von Bertalaffy’s concept of “equifinality” asserted that the same end-state can be obtained in several different ways. However, in closedowns events, differing end-states have been observed. Buckley’s [17] systems theory model (see Fig. 1) recognizes these varying end-states; defined by Buckley as “multifinality”. Combining classical institutionalization theory (mainly Max Weber) with social psychological interactionist theories (mainly G.H. Mead [41,42]), Buckley’s work facilitates an analysis of the changed institutional order which could arise from dramatic events, a fact which makes this theory interesting for the context of closures. The Buckley feedback-controlled sys-

![Fig. 1. Buckley's (17, p. 138) simplified systemic view of the “collective behavior”.

```plaintext
Fig. 1. Buckley's (17, p. 138) simplified systemic view of the “collective behavior”.
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tems are referred to as goal-directed, since it is deviations from the goal-state itself that direct the behavior of the system, rather than some predetermined internal mechanisms that aims blindly. The focus on feedback mechanisms challenges the oversimplified notion of one-sided cause-effect relationships. We hold that it is not possible to point out one single factor causing the Closedown effect. The complex phenomena under study calls for a feedback model addressing the total socio-cultural system in the context analyzed (see Fig. 1).

One core element of Buckley’s model, as shown in Fig. 1, is “system tension” or “strain”, on individuals. This tension may diminish or be exacerbated through changes in the institutional structure. Buckley [17, p. 51] explicates “tension”, of which “stress” and “strain” are manifestations, to be ever present in one form or another throughout the socio-cultural system. Examples of tension are socially unstructured strivings, frustrations, enthusiasms, aggressions, neurotic or normative deviation, crowd or quasi-group processes [17]. In the closure context and related events, strain is commonly manifest as worry, anxiety and insecurity for the affected individuals over their future employment, possibly worsened if the employee feels isolated, or unsupported. Also, central to the model are “purposive systems” and “feedback loops”. For purposive systems goals are explicit, conscious and intentional. Social feedback models have been suggested by a few scientists like Vickers, Deutsch and Easton. Based on such purposive systems analysis the feedback loops in the Buckley [17] model illustrates the modifications and effects on goals as the actions are carried out.

The feedback loops in Fig. 1 are twofold, viz. the structural elaboration loop and the reorganization loop. The “closed circuit feedback” is not obviously visible in Fig. 1, but it does not affect the institutional and economic structure at all, since it is feeding back on itself with the further progression in the model, i.e., internalization of the strain. Such halts in the further progression of feedback loops can appear between all feedback boxes in Fig. 1. The structural elaboration/disorganizing feedback loop on the other hand is a first order change triggered by the initial strain, developing through the causal chain from individual reactions to more collective actions which creates pressure to change the institutional structure. The reorganization feedback loop is a second order change that reorders the given institutional and economic structure, range developing from strain on individuals to group actions. The reorganization feedback emanates from two sources, the legitimate opposition and/or collective organization for action.

The concept of “given institutional structure” in the Buckley model needs to be further elaborated for our purpose to understand the Closedown effect. The limitation of Buckley’s [17] model of collective behavior is its abstract character, leaving the sources of intentionality and meaning unexplained. We argue that this weakness in the model can be managed if context specific intentionality and meaning is included. Closedown situations represent a context where the management intentionally has established a pressure towards economic restructuring, which puts much more focus on the economic structure. Economic situations differ, which influence the decision maker’s ability and willingness to make short-term sacrifices for the possibility of long-term gains. Economic decision makers can be either short-terminist or long-terminist. When including corporate economic measures, productivity becomes important. It is both a new institutional structure and a new economic effect on the organizational level that is the focus of our paper. We therefore adjust the Buckley model so that “given institutional structure” is interacting with the “given economic structure” and management intentions connected to this structure.

Buckley’s purpose was to elaborate how institutions create strain among people on a macro level of analysis and did not address single organizations economic tensions and outcomes. We therefore define the system boarder for the economic structure as the corporate organization.

The given economic structure can in itself be viewed as a state that is altered, dynamically. The dynamics involved includes elaboration and restructuring by feedback loops connected to the interplay between the company management, its competitive environment and the rest of the institutional structure. We therefore add the economic structure to the Buckley model as illustrated in Fig. 2.

The principal dynamics in Fig. 2 is that the given institutional structure at time $t_1$ is seen as a temporary state of economic and labour-management relations based on past events. In the closedown case the $t_1$ is based on the “prenotice period” where top management is deciding on the timetable for the closedown. Management is in the closedown situation putting pressure towards restructuring for economic reasons, with the ambition of increasing profitability. This institutional structure $t_1$ is reordered by the feedback loops into new institutional structures $t_2, t_3 \ldots t_N$. Applying
this more precisely in the closedown situation the time point \( t_1 \) marks the public announcement of the decision to close down. The time between \( t_1 \) and \( t_2 \) is related to the advance notice period and the time elapsed between \( t_2 \) and \( t_3 \) is the countdown period. The structure of the system is thus viewed in terms of sets of alternative actions, associated with the components and the constraints that specify, or limit, these alternative actions.

4. The Fundia Steel Wire Rod case study

On 16 October 1998, the Group Fundia announced that its Rod wire mill located in Smedjebacken, Sweden, would be closed as part of a restructuring in Fundia Steel, top management suggesting the concentration of the rod bar production to its “Mo i Rana” (Mo) plant in Norway. It was an insecurity for the steel workers if they should be able to get new job opportunities on the local labour market in Smedjebacken, due to the relatively high level of unemployment in the local community. The best opportunity for some of them was job transfer to the two remaining plants in the Fundia location in Smedjebacken. The closedown period of the Wire Rod Mill was about 33 weeks. Negotiations took place with the unions for about twelve weeks, the advance notice period. Thus the countdown period was approximately 21 weeks. In terms of productivity, in 1998, the Smedjebacken plant’s rate of 44 tones per hour (tph) compared with an average of approximately 58 tph in the “sister” Norwegian plant. As the Norwegian plant had more modern technology the economic intention of the restructuring plan was to close down the low productivity plant in order to increase the total productivity across the Group.

The closedown had initially non socially-responsible characteristics because the local trade union, with the help of a Wage Earner Consultant, had presented an economically viable alternative, challenging the calculations Fundia’s management had used to justify the closure. Swedish labor legislation includes collective bargaining, as discussed earlier, entitles the affected union to engage a Wage Earner Consultant as a third
party, to evaluate and critically review the decision to close the plant. The collective bargaining position of Swedish trade unions is comparably strong because of a high degree of unionization and the existence of collective agreements. Summarizing, the wage-earner consultant’s report contended the Smedjebacken plant operations could be prolonged if the fifth shift in the Norwegian plant was discontinued. In effect, the fifth shift at Mo was found far less profitable than the Smedjebacken operation. A prolongation of the Smedjebacken plant would win adjustment time for other measures taken, to increase expansion in the local community. Despite this wage-earner consultant’s report [60], the Fundia board did not change its decision; instead it produced a counter-arguing report.

The firm planned to have the Smedjebacken plant markedly increase its production of the slowest to produce rods (8 mm) during the closedown period. The product would then be stockpiled. Management budgeted on a production rate 38 tph, during the closedown period for the purposes of their revised calculations, in effect, was slowing the plant down due mainly to changes in the product lines being manufactured. In other words, management altered the plant’s production assortment compared to normal and in effect its efficiency, to legitimate the original closure decision. This new management report concluded that the fifth shift in Mo was more profitable, compared to Smedjebacken based on the 38 tph assumption. The final decision, after negotiations, to close down operations at Smedjebacken was made in the end of January 1999 with the operation finally terminated in June 1999. The strong position of the Wage Earners’ Consultant’s report and the alternative calculations however provided the local trade union with a bargaining position and the workers received bonus and severance payment, which makes this closedown case somewhat closer to a SR-case in this respect.

Figure 3 illustrates the productivity changes over time. Initially, during the advanced notice period (mid-
October to late December) productivity fell. However, as Fig. 3 shows, after the negotiations had been concluded, the plant experienced the Closedown effect with productivity trending upwards during the five months of the countdown period, achieving a mean production rate of 50 tph. This compared with a mean 44 tph, prior to the closure announcement. When compared to the company’s budgeted 38 tph, which is the most appropriate comparator, the outcome of the Closedown effect, was 29 per cent above target. Importantly, the number of blue collar workers did not change during the period from July 1998 to June 1999.

There is a need for a parallel analysis of two distinctive periods. The first interception is a trend extrapolation based on the period prior to the closedown decision and the second refers only to the closedown period. For that reason we conducted a subgroup analysis considering the period prior the closedown decision and the period after the closedown decision. The test for parallelism indicate a statistically significant Closedown effect ($T = 26.532, \delta = 7.37$), mainly during the countdown period.

Given the Closedown effect noted, it is relevant to stress the fact that the announcement of a closedown is not part of a deliberate management tactic to induce the effect. The closedown decision resulted from a downturn in the wire rod market, due to the crisis in Asia, which made it impossible for European steel manufacturers to sell wire rods into that market as they had done before the crisis. Europe was facing an over capacity problem.

The research determined that a number of factors were at work, all underpinning the extensive rise in Closedown effect. Individually, the workers were unsure who and how many would be offered employment in the same location, but in another production unit. None of the interviewees reported that they were anxious to ensure that they received a good referral or reference from their employer; ultimately 8 out of 33 were made redundant. Notably, and different from most other closedown cases, no monetary incentives such as productivity related bonuses were paid. Collectively, the workers expressed their sense of hurt pride and were motivated to prove to the Fundia that their 38 tph estimate was wrong. Some reported, for instance: “Let’s show management that we can do better than 44 tones per hour – it’s unfair to close down this plant”. Others believed exceptional performance may save the plant, commenting that “most of us did not think that the production would be terminated” and “we’re not finished before the last shift is ended”. To our experience this eternal hope is however unjustified in most cases, as it was in the Fundia case. There is usually a lot of management prestige involved, forcing them to stay put with the initial plan. For the trade unions, they were able to negotiate from a favorable position, leveraging off the Wage Earners’ Consultant’s report to gain a human resource program incorporating retraining, early retirement, job search aid and severance payments, but not bonus payments.

Management control faded during the countdown period allowing far greater flexibility. It became easier to make decisions on the shop floor concerning operating decisions on how to run the production process. More informal work practices developed especially following the appointment of a shop floor foreman as the plant manager. Changeover and start-up times were reported in a number of cases to have been reduced by 10–15 minutes and 15 minutes respectively. They also noted a more efficient handling of breakdowns and necessary maintenance. Some temporary job sharing activities took place to allow workers time “off-site” for education programs. However, overall, no workers left permanently prior to the shut down. So, how does the modified Buckley model (Fig. 2) apply to the Smedjebacken case study?

Top management launched a restructuring plan to enhance productivity triggered by the market downturn. Following the closedown announcement, the unions restructuring alternative gave new hope in Smedjebacken. The first order feedback loop illustrated in Fig. 4 did however not result in a restructuring according to the economically viable alternative that the trade unions proposed.

The trade union bargaining position resulted in a new situation $t_2$ that trigged a second order feedback loop with the HRM-programs, illustrated in Fig. 5. The resulting debate concerning alternatives gave trade unions a substantial set of human resource management-styled support. A new plant management scheme was also negotiated for operations during the countdown period, which resulted in significantly less management control.

5. Analysis and conclusions

Analyzing the reordering of the organizational and economic structure in the Smedjebacken case reveals how the closedown decision, because of the strain that it introduced, knocked out the established productivity equilibrium into a state of steeply declining productiv-
Fig. 4. The “blind feedback loop” during the advance notice period at the Wire Rod plant.

Fig. 5. The feedback loops in the countdown period at the Fundia Steel Wire Rod plant.
This initial downturn in productivity put pressure on plant-level negotiations during the advance notice period, a pressure which was heightened by the release of the viable alternative set out in the Wage Earners’ Consultant’s report. The following agreement by the firm to only provide a socially-responsible set of human resource management interventions, to some extent moderated the strain, thereby providing the turning point and setting the conditions in place for the much steeper productivity trajectory. During the countdown period, the previous management constrains on the work groups were removed.

We have labeled Fig. 6 as the “economic reordering into the closedown equilibrium” illustrating the fundamentally new economic order during the closedown period. This new order is trigged by the closedown decision and the ideal-typical pattern is the “hockey-stick” illustrated in Fig. 6.

After the initial knock out of economic equilibrium in the beginning of the advance notice period, we have in Figs. 4 and 5 been able to identify a pattern of social dynamics – over time where a variety of factors come into play. The overall dominating pattern is that top management by the closedown decision has deprived themselves from their control possibilities. At first during the advance notice period they still have bargaining power and can reject propositions from the shop floor and at the same time the workers react by lowering their performance to put pressure on negotiations. In our case this however created a blind feedback loop, not influencing the institutional structure, only the economic structure. During the countdown period the management control fades away totally and the temporary new organizational and economic order is established which alter the system tensions into constructive measures that set free previously held back performance and increased creativity on the shop floor, resulting in a strong increase in productivity. The main pattern in the new order is that management control is replaced by more “Self-management” on the plant level, and very strong psychological reactions based on the unfairness feeling. Underlying is the disagreement concerning the close down decision, the decision counteracted on the shop floor with possible means characterized by comments such as “let’s show them”. The new temporary order that is established during the countdown period is only local and is by no means re-
ordering the institutional structure on the labour market in Sweden.

Each closedown process has a set of unique characteristics in the way it unfolds. The dynamic modeling applied on our case study put these factors into perspective, increasing our understanding of the puzzling phenomena, the Closedown effect. Since the variables are interrelated we have illustrated how clusters of variables can be linked together in a comprehensive model that does not reduce the contextual complexity into one single variable or one single cause-effect relation. This provides a better understanding concerning what clusters of variables are influencing the changes in productivity and the strong Closedown effect during the countdown period. Plus, the model integrates the individual, collective and economic/institutional dynamics.

Since the model is applied on only one single case, it is tentative and therefore there is a need to verify or falsify this model. Each of our empirically found characteristics/variables included in the dynamic model may offer some explanatory possibility, for the manner in which the closure unfolds. Understanding the mechanisms involved that creates the Closedown effect, how single cause-effect relations reinforce the effect, we have learned that this effect is built up by forceful systemic blocks in real cases.

References

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