

FOR THE TIME BEING:

Accounting for inconclusive findings concerning
the effects of temporary employment relationships
on solidary behavior of employees

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RIJKSUNIVERSITEIT GRONINGEN

**FOR THE TIME BEING:
ACCOUNTING FOR INCONCLUSIVE FINDINGS
CONCERNING THE EFFECTS OF TEMPORARY
EMPLOYMENT RELATIONSHIPS ON SOLIDARY
BEHAVIOR OF EMPLOYEES**

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CONTENTS

1 INTRODUCTION

The Effects of Temporary Employment Relationships on Solidary Behavior

	1
1.1 Introduction	1
1.2 Temporary employment relationships	5
1.2.1 Temporary employment: Demand and supply	5
1.2.2 Developments in temporary employment relationships	6
1.2.3 Internal labor markets	8
1.3 Effects of temporary work on employee behavior	9
1.4 Dealing with the inconclusive results	11
1.5 Solidarity and embeddedness	13
1.5.1 Temporal embeddedness	13
1.5.2 Network embeddedness	14
1.5.3 Temporary employment relationships and embeddedness	15
1.6 Research strategy and data sources	18
1.6.1 Research strategy	18
1.6.2 Data sources	18
1.6.3 Kinds of organizations	19
1.6.4 Solidarity at Work Survey	21
1.7 Overview of the book	22
1.8 References	24

2 SOLIDARITY OF TEMPORARY WORKERS

The Effects of Temporal and Network Embeddedness on Solidary Behavior of Ph.D. Students

	31
2.1 Introduction	31
2.2 Solidarity	32
2.3 Social embeddedness and OCB	33
2.3.1 Temporal embeddedness	34
2.3.2 Network embeddedness	35
2.4 Method	37
2.4.1 Procedure	37
2.4.2 Measures	38
2.4.3 Results	39
2.5 Discussion and conclusions	43
2.5.1 Theoretical and practical implications	43
2.5.2 Limitations and suggestions for future research	45
2.6 References	46

**3 ORGANIZATIONAL CITIZENS OR RECIPROCAL
RELATIONSHIPS?**

An Empirical Comparison	51
3.1 Introduction	51
3.2 Issues in OCB research	52
3.2.1 OCB: In-role versus extra-role behavior?	53
3.2.2 Dimensionality of OCB	54
3.2.3 OCB: A concept in search of a theory?	55
3.3 Organizational Solidarity (OS)	55
3.4 Data	57
3.4.1 Respondents	57
3.4.2 Procedure	58
3.4.3 Measures	58
3.5 Data analysis	60
3.5.1 Multiple Group Method	60
3.5.2 Scale construction	61
3.5.3 Correlations	65
3.5.4 Regression analysis	65
3.6 Summary of the findings	68
3.7 Discussion and conclusions	69
3.7.1 Theoretical and practical implications	69
3.7.2 Limitations and suggestions for future research	71
3.8 References	72

4 SERIAL SOLIDARITY

**The Effects of Experiences and Expectations on Cooperation
within Teams**

	77
4.1 Introduction	77
4.2 Temporal embeddedness	79
4.2.1 Learning from past experiences	80
4.2.2 Control through future interactions	81
4.3 Data analysis	82
4.4 Study 1: Survey	83
4.4.1 Respondents	83
4.4.2 Procedure	84
4.4.3 Measures	84
4.4.4 Results of study 1	88
4.5 Study 2: Vignette Study	92
4.5.1 Respondents	92
4.5.2 Procedure	93
4.5.3 Measures	95
4.5.4 Distribution of the experimental conditions	96
4.5.5 Results of study 2	97
4.6 Summary of the findings	100
4.7 Discussion and conclusions	101
4.7.1 Theoretical implications	101
4.7.2 Practical implications	103
4.7.3 Limitations and suggestions for future research	104
4.8 References	105

5 SOLIDARITY THROUGH NETWORKS	
The Effects of Task and Informal Interdependence on Cooperation within Teams	111
5.1 Introduction	111
5.2 Networks and solidarity toward co-workers	114
5.3 Interdependence in teams	115
5.3.1 Position to position: Task interdependence	116
5.3.2 Person to person: Informal interdependence	117
5.3.3 Task interdependence and informal interdependence	118
5.4 Data analysis	120
5.5 Study 1: Workplace Ethnographies	121
5.5.1 Level of analysis	121
5.5.2 Procedure	122
5.5.3 Measures	122
5.5.4 Results	124
5.6 Study 2: Survey	126
5.6.1 Respondents	126
5.6.2 Procedure	127
5.6.3 Measures	127
5.6.4 Results	130
5.7 Summary of the findings	133
5.8 Discussion and conclusions	134
5.8.1 Theoretical implications	134
5.8.2 Practical implications	136
5.8.3 Limitations and suggestions for future research	136
5.9 References	138
6 CONCLUSION	145
6.1 Introduction	145
6.2 Hypotheses	147
6.3 Research design	148
6.4 Overview of the findings	148
6.4.1 Reciprocity	150
6.4.2 Temporal embeddedness	151
6.4.3 Network embeddedness	152
6.5 Limitations, strengths and future research	153
6.5.1 Limitations and strengths	153
6.5.2 Future research	154
6.6 Practical implications	156
6.7 Concluding remarks	158
6.8 References	159
APPENDIX A: Overview of the University Departments	163
APPENDIX B: Overview of Scales and Items	164
Samenvatting (Dutch Summary)	169
Acknowledgements	179
ICS Dissertation Series	181

1

INTRODUCTION

The Effects of Temporary Employment Relationships on Solidary Behavior of Employees

1.1 INTRODUCTION

Employers who are managing today's workplace are believed to demand both solidarity and flexibility from their employees due to pressures from the organizational environment. At the same time as some researchers have argued, solidarity and flexibility may be in conflict with each other (Sanders, 2000; Sanders, Van Emmerik, & Raub, 2002). The studies in this thesis deal with the relationship between temporary employment contracts and solidarity of employees within modern organizations and investigate to what extent there is a tension between the two.

Modern organizations are characterized by organizational structures enabling them to deal with environmental changes (Burns & Stalker, 1961; Aldrich & Pfeffer, 1976). Classical organizations operate efficiently and reliably in stable organizational environments, but have limited capacity to quickly adapt to changing circumstances (Burns & Stalker, 1961; Simon, 1969), mainly because of their inability to efficiently process the necessary information (Galbraith, 1973; Radner, 1992). Modern organizations, in contrast, face changes in their market demand and require a lot of coordination between employees or departments. As a result, the use of lateral relations and mutual adjustment are supposed to be more efficient than direct supervision and standardization of work processes (Lawrence & Lorsche, 1967; Thompson, 1967; Mintzberg, 1980; Victor & Blackburn, 1987). Therefore, many modern organizations use teams in which employees are expected to work

closely together and to align their activities without the presence of a supervisor who directs and monitors their work all the time (Cohen & Bailey, 1997).

Within team structures, tensions can arise between the interest of the individual and the interest of the team (March & Simon, 1958). For instance when team members are interested in the rewards they can receive through the team while they are not willing to contribute to the common task of the team. To secure individual contributions in team structures, solidary types of behavior shown by employees are assumed to be important (Sanders, 2000). In this section, the example of a soccer team is used to illustrate what solidarity within a team means. Soccer teams are similar to teams within organizations with regard to the following features: (1) they consist of individuals who have to work together to attain a certain goal; (2) the team goal may be clearly defined but how to attain it is to a large extent decided by the team members; and (3) the team will try to respond to changing conditions in the organizational environment. In the case of soccer, the team will try to win the match, based on a general strategy developed by the coach, and this strategy changes depending on the opponent's strategy. Within teams, solidarity between individual members may be important as illustrated by a soccer team playing a match on a rainy day. Because the field is wet and slippery, it will be difficult to play on. Imagine that one of the opponent's players breaks through the team's defense because one of the defending players slips on the wet field. The rest of the team can respond by thinking that it is not their job to defend and therefore just observe what is going to happen. Perhaps someone else will start to run and take over the defense task, which may be beneficial for everyone else in the team. Or, at worst, they can start laughing and make fun of their team-mate. However, they can also have the team's ultimate goal – winning the match – in mind and show solidarity by trying to capture the player who is about to score a goal.

The players who are taking over the task of defending the goal show solidarity by not worrying about getting tired and putting the team goal first. A characteristic of solidary types of behavior is that there is a short-term tension between the individual interest and the common interest (Lindenberg, 1998). This tension leads to the expectation that individuals will be inclined not to show these types of behavior because most people prefer the situation in which someone else puts in an effort for the common good instead. Still, individual group members do show these types of behavior. Assuming that most people will do something when the benefits of acting in a certain way outweigh the costs means that there is something to gain by acting solidary.

Two ways in which the benefits of acting solidary may increase, are illustrated by the soccer team example. Let us call the players Freddy (the forward)

and Simon (the sweeper). When Simon slips, Freddy can decide to keep the opponent from scoring. What may be the reason that Freddy chooses to do so? The most obvious reason is that he wants to win the match and therefore has an incentive to stop the other player. Nevertheless, even if this is so, it is still a better option for Freddy that someone else would do the job. An additional reason for Freddy to start running can be found in his relationship with Simon. If they have been playing together for a while and Simon has helped Freddy out in a similar situation, Freddy now has the opportunity to help Simon. It is also possible that Freddy takes the future with Simon into account. If Freddy helps Simon at this moment, Simon may help Freddy in the future. *Therefore, the past and the future that Freddy shares with Simon may be an important reason for him to show solidarity toward him.* Another reason why Freddy may help Simon is that besides themselves, there are nine other players in the team, who will also be better off if the ball is kept out of the goal. Therefore, if Freddy manages to do that, he is likely to be rewarded by all the other players. Moreover, if Freddy does not try to get the ball, he runs the risk of being punished by the whole team for not showing solidarity. *Therefore, the relationship that Freddy and Simon have with the rest of the team can create strong incentives for them to show solidarity toward team-mates.*

It is important to note that there are several additional reasons for players to show solidarity toward their team-mates. First, the coach has the ability to control the players, by keeping them out of the team when they do not play in the team's interest. Second, individual players may be concerned about their professional career. Both of these reasons have to do with the extent to which individual contributions can be measured. During every match, coaches and others monitor the effort of individuals outside the team, such as recruiters looking for talented players^{1.1}. The example of the soccer team serves as an illustration of solidary behavior and how it may be affected by the relationships between individuals. It illustrates that within teams, individual actors depend on each other for the completion of a group task and that within teams there is a tension between contributing to the team task by starting to run or taking over a task versus trying not to become exhausted by showing no effort and letting others do the dirty work.

^{1.1} Many teams within organizations differ in this respect, because it may be much harder or even impossible to determine individual contributions (Ouchi, 1980; Williamson, 1981). Moreover, one of the benefits of teams is that team members can arrange the work together, without being monitored all the time. Even still, monitoring and career opportunities may affect solidarity within teams. The extent to which this is so is not studied in this thesis.

The example of the soccer team shows that solidarity between two actors may be affected by the possibility to interact with each other over a longer period as well as by their relationship with other actors. However, a second important characteristic of modern organizations, labor flexibility, may decrease these possibilities and thus the level of solidarity within organizations. The aim of different flexibility strategies is to respond more effectively to changing market conditions, to minimize costs, and to provide better services to more demanding customers (Sethi & Sethi, 1990; Cohen & Bailey, 1997; Houseman, 2001; Michie & Sheehan-Quinn, 2001; Allen, 2002). Labor flexibility refers to qualitative and quantitative adjustments of the workforce, labeled functional and numerical flexibility (Atkinson, 1984; Kalleberg, 2003). *Functional flexibility* usually concerns the organization's internal organization of labor and is achieved by broadening the range of tasks in jobs (Treu, 1992; Applebaum & Batt, 1994; Cohen & Bailey, 1997; Osterman, 2000). Broadly skilled workers can move to different parts within the organization to work on tasks that are required at that moment. *Numerical flexibility* often refers to the (external) use of workers who are not the regular fulltime employees (Kalleberg, 2003). When market demand is fluctuating, the demand for labor will fluctuate as well. By using numerical flexibility, organizations can more easily make quantitative adjustments possible. An important means through which organizations can do this is by hiring workers for a fixed period (Tsui, Pearce, Porter, & Hite, 1995; Nollen, 1996; Templeman, Trinephi, & Toy, 1996; Tsui, Pearce, Porter, & Tripoli, 1997).

Temporary employment relationships in particular may affect the social relationships between workers in modern organizations and are the main issue studied in this thesis. The question is what happens if organizations demand solidary behavior of employees and labor flexibility at the same time. Applying this to the example of the soccer team, the question can be posed how hard the players will run if their relationship with the others in the team will be temporary. And, in organizational teams the question may be asked whether employees who have to work closely together for a short period of time and whose relationship with co-workers ends in the near future are less willing to show solidarity to each other by contributing to the common good. The general questions addressed in this thesis are: *Under what conditions will the use of temporary employment relationships undermine solidary behavior of employees? And, under what conditions will the solidary behavior of employees not be undermined by the use of temporary employment relationships?*

The remainder of this chapter is organized as follows. In section 1.2, temporary employment relationships are discussed. It is described what accounts for the

demand for temporary employment relationships, how it has developed recently, and how it may affect the internal organization. In section 1.3, the literature addressing the effects of temporary work on employee behavior is summarized. Sections 1.4 and 1.5 discuss how the studies in this book try to contribute to some of the gaps in the existing literature by investigating the effects of social context on solitary behaviors. Section 1.6 provides an overview of the data that are used in the different chapters. In section 1.7 a short introduction to the chapters is given.

1.2 TEMPORARY EMPLOYMENT RELATIONSHIPS

Temporary employment relationships include those employment arrangements where there is no explicit or implicit contract for long-term employment (Polivka & Nardone, 1989). Such temporary relationships are sometimes put under the heading of the broader term ‘nonstandard employment relationship’ to distinguish them from the regular full-time job (see, for a review, Kalleberg, 2000). The studies in this thesis do not deal with the whole range of nonstandard employment relationships but focus exclusively on temporary employment relationships. Examples of this kind of employment relationship are limited-duration direct hires, hires from temporary help services, and contract workers (Masters & Miles, 2002). Despite some differences between the kinds of work arrangements, they all concern contracts that will dissolve in the near future.

1.2.1 TEMPORARY EMPLOYMENT: DEMAND AND SUPPLY

The demand for flexible labor has grown steadily during the last decades. Labor markets have undergone considerable changes mainly due to production market developments, such as increased competition and global interdependence of economies, asking for rapidly responding organizations (Benson, 1995; Capelli, 1999; Allen, 2002). It is assumed that the replacement of permanent workers with temporary, on-demand workers creates a flexible workforce that can respond quicker and more cost efficient to changing business conditions (Tan & Tan, 2002). Temporary employment contracts allow employers to respond cost effectively to fluctuating markets by laying off and rehiring employees (Matusik & Hill, 1998; Parker, Griffin, Sprigg, & Wall, 2002). Employers gain freedom in hiring and firing because temporary workers do not have an implicit or explicit contract for on-going employment (Pfeffer & Baron, 1988; Polivka & Nardone, 1989; Tsui et al., 1995; Feldman, Doeringhaus, & Turnley, 1995). Moreover, using temporary employment contracts is attractive for employers because they have to spend less money on recruitment, training, fringe benefits, and severance of the contract (Pfeffer &

Baron, 1988; Von Hippel, Mangum, Greenberger, Heneman, & Skoglund, 1997). Because of these benefits, it is attractive for employers to use temporary employment relationships. According to recent surveys between 40 and 50 percent of organizations use temporary workers (Goudswaard & Batenburg, 2000; Houseman, 2001).

The main driving force behind the rising use of temporary workers comes from the demand-side of the labor market; employers requiring flexible staff to meet market demands and changes in business cycles (Remery, Van Doorne-Huiskes, & Schippers, 2002). Notably, the increasing use of workers who are employed through temporary help agencies turns out to be largely the result of employers' needs (Golden & Appelbaum, 1992). Besides that, some supply-side developments account for the use of flexibility. Some workers, such as married women, older workers, students, newcomers, and highly-educated professionals may be interested in a temporary job because it enables them to balance their work with other activities or because of the autonomy it provides (Pfeffer & Baron, 1988; Remery et al., 2002; Sanders, Nauta, & Koster, 2002). Although some employees may be interested in having a temporary employment relationship, most people do not like to hold a temporary job and prefer a permanent job instead. A recent study among a large sample of employees shows that most of them expect the number of temporary contracts to grow in the near future. Most of them indicated to dislike this development (Ester & Vinken, 2001).

1.2.2 DEVELOPMENTS IN TEMPORARY EMPLOYMENT RELATIONSHIPS

The number of people working through temporary employment arrangements has grown considerably. This development has been called "one of the most spectacular and important events that has occurred in labor markets" (Nollen, 1996: 567). In this section, the scope of this event is illustrated. Table 1.1 shows the development of temporary work in the period 1985-2000 for the Netherlands, the EU12 (Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and UK), and the US^{1,2}.

^{1,2} Martin and Stancanelli (2002: 42) emphasize that: "There is not a standard international definition of temporary work. The OECD defines temporary work as all salary and wage (dependent) work arrangements that have a pre-determined ending date, including work carried out under fixed-term contracts, provided through temporary work agencies, for a specific piece of work, to replace a worker on leave, seasonal work, and any other short-term employment arrangement."

TABLE 1.1
Percentage temporary workers of the total workforce
in the Netherlands, the EU, and US

	1985	1990	1995	2000
Netherlands	7.4	7.6	10.9	13.8
EU total	10.1	11.7	12.0	15.1
US	n.a.	n.a.	4.9	4.0

Source: OECD database on temporary employment (adopted from Martin & Stancanelli, 2002)

n.a.= data not available

The number of temporary workers has increased over the period 1985-2000 in the EU12 and the Netherlands; and, they have become a larger fraction of the total workforce. In the EU, the number of temporary workers rose from 10 percent in 1985 to 15 percent in 2000. In the same period, the number almost doubled in the Netherlands, from 7.4 percent to nearly 14 percent (European Commission, 1999). Recent statistics show that the growth of the number of people working on a temporary employment contract has not come to a stop yet. Currently, more than 14 percent of the Dutch labor force is temporarily employed. Table 1.1 shows that the increase in the number of temporary contracts accelerated more in the Netherlands compared to the rest of the EU, bringing it close to the average in the EU. Developments in the demand for labor have not been the same for every EU country and there is quite some variation between them. In 2002, the top three countries concerning temporary workers were Spain (31.2 percent), Portugal (21.8 percent), and Finland (17.3 percent). Low incidences of temporary workers are found in Ireland (5.3 percent) and the UK (6.1 percent). Compared to the US, the European numbers are high. In 2000, around 5 percent of the people in the US labor market had a temporary employment contract (Martin & Stancanelli, 2002). Low numbers of temporary contracts can be explained by the lack of employment regulation. When employees are less rigidly protected, there are fewer incentives for employers to offer temporary contracts (Booth, Dolado, & Frank, 2002; Martin & Stancanelli, 2002; Djankov, La Porta, Lopez-de-Silanes, Shleifer, & Botero, 2003).

The two most common ways of employing temporary workers are (1) hiring directly on a temporary basis and; (2) hiring through intermediaries, usually a temporary help agency that employs workers and sends them to customers (Kalleberg, 2000). In the US, employment through temporary help agencies grew from 165,000 in 1972 to over 3.5 million by 2000 (Golden, 1996; Segal & Sullivan, 1997; Ono & Zelenev, 2003). Between 1983 and 2000, the number of temporary

help agency workers as a fraction of the total workforce grew from 0.5 percent to 2.6 percent (U.S. Bureau of Labor Statistics, 2001). Traditionally, the temporary help industry is about 50 percent larger in Europe than in the United States (Overman, 1993). As with the use of temporary contracts, there are considerable differences in the use of temporary help agencies within Europe. At the end of the nineties, temporary help workers accounted for only a small fraction of the total labor force in Denmark (0.3 percent). In the Netherlands, this number was a lot higher (4.5 percent of the labor force). The number of temporary help agencies in the Netherlands increased from 500 in 1995 to 3500 in 2001 (Dunnewijk, 2001). The expectation is that there will be no further growth but that the number of agencies will stabilize around this point (Miedema & Klein Hesselink, 2002).

Besides the quantitative developments, there have been shifts in the use of temporary employment relationships that depart from earlier days (Smith, 1997; Kalleberg, 2000). First, there has been a shift in the type of jobs in which temporary workers are employed. In the past, external labor arrangements – consisting of workers from temporary help services and limited-duration direct hires – were focused on clerical staff and blue-collar workers (Masters & Miles, 2002). Nowadays, a greater number of technical workers, accountants, and other professionals have become part of this segment of the labor market (Smith, 1997; Masters & Miles, 2002). Earlier on, being a flexible worker meant holding a bad quality job and earning a low wage. Because more highly skilled professionals have become part of the flexible workforce, the relationship between temporary jobs and labor quality and wages has changed. Second, flexible employment arrangements are increasingly considered a part of the overall strategy of the organization. Whereas temporary workers used to be hired to fill in empty spots caused by vacation or illness, they now have become an integral part of the company's strategy (Nollen, 1996). In fact, instead of only being a low cost strategy, it is assumed that the performance of organizations is positively affected by the strategic use of flexibility through external employment arrangements (Wright & Snell, 1998; Lepak & Snell, 1999). Thus, not only the number of temporary workers has grown but they are employed in a greater variety of jobs, across different economic sectors, and are considered as valuable resources for organizations as well.

1.2.3 INTERNAL LABOR MARKETS

The strategic use of temporary employment relations affects organizational structures and is related to the supposed and sometimes evidenced erosion of internal labor markets (Capelli, 1999; Grimshaw, Ward, Rubery, & Beynon, 2001). By using internal labor markets, the core workers are sealed off from the external

labor market and are offered an employment relationship consisting of a permanent job, a progressing career, a transparent pay structure, protection against layoffs, and on the job training (Doeringer & Priore, 1971; Grimshaw et al., 2001). Internal labor markets create employment stability and are a means of providing an incentive for employees to work for the organization and stay there to enjoy the promised future rewards. Some researchers argue that stable employment relationships are becoming less important and may even be replaced by what is termed the ‘boundaryless career’, referring to careers unfolding at different employment settings in which a person does not expect lifelong employment but a contract of limited duration (Arthur & Rousseau, 1996; Van Buren, 2003). Boundaryless careers are expected to lead to declining job tenure and job security (Valletta, 1999), but the empirical evidence with regard to this is mixed. It has been shown that there have not been dramatic changes in job tenure (Schmidt & Vorny, 1998). Conversely, the perception of job security has declined (Hartley, Jacobson, Klandermans, & Van Vuuren, 1991; Doherty, 1996). These somewhat incompatible findings seem to indicate that, although some of the changes in the workplace do not affect the workers directly, they may affect their view on career opportunities within organizations.

1.3 EFFECTS OF TEMPORARY WORK ON EMPLOYEE BEHAVIOR

To what extent does the use of temporary employment relationships affect employee behavior? Studying employee behavior is not only relevant because of the growth in the number of temporary workers that is currently employed, it is also important because managers have to deal with the ‘problem of organization’, that is “the problem of obtaining cooperation among a collection of individuals or units who share only partially congruent objectives” (Ouchi, 1979: 833). Creating cooperation between parts within an organization has always attracted the attention of managers, but has become even more salient as organizations move toward team-based organizational structures (Cohen & Bailey, 1997). Within team structures, employees are expected to coordinate their tasks and monitor the quality of each other’s work. This requires contributions from each individual to the common team goal (Smith, Carroll, & Ashford, 1995; Sanders, 2000). Ensuring everyone’s contribution can be problematic in teams because every individual member will be interested in the benefits that the team can offer, but less in putting a lot of effort into it (Miller, 1992; Murnighan, 1994). How does this kind of behavior relate to the declining time-spans of relationships due to the use of temporary work? Are

organizations that employ many temporary workers able to bring about cooperation between different actors or are they creating an imbalance between the demand for and the supply of cooperative types of behavior (Janssens & Brett, 1994; Raub, 1997; Sanders, 2000; Organ & Paine, 2000; Sanders et al., 2002)? This question points to a somewhat paradoxical situation that may occur in modern organizations (Tsui et al., 1995; Sanders, 2000). On the one hand, firms are encouraged to invest in their personnel because these are unique human resources consisting of capabilities which are regarded as a primary source of competitive advantage (Miles & Snow, 1995). At the same time, there may be fewer opportunities and incentives to invest in these employees because of the increasing use of temporary workers (Master & Miles, 2002). Related to this, organizations put more emphasis on cooperative types of behavior of their employees, while the use of temporary employment relationships may undermine positive types of behavior shown by employees (Pfeffer, 1994; Tsui et al., 1995; Moorman & Harland, 2002).

A general theoretical expectation is that temporary workers will have less positive exchange relationships with organizations than regular employees (Tsui et al., 1995; Tsui et al., 1997; Sherer, 1996), because they receive few if any benefits, are not routinely considered for promotions, and cannot expect a steady work schedule or long-term employment (Mangum, Mayall, & Nelson, 1985; Cappelli, 1999). Therefore, it is expected that temporary employment relationships lead to the situation in which the employer offers a short-term financial inducement in exchange for narrow and well-specified contributions by the employee (Parker et al., 2002). Although there is a strong theoretical rationale to expect less positive outcomes with temporary work status, past research does not support this view (Van Dyne & Ang, 1998). Moreover, the literature concerning the effects of labor flexibility on cooperation shows that relatively little is known about how temporary contracts affect attitudes and behavior at work (Howe, 1986; Pfeffer & Baron, 1988; Beard & Edwards, 1995; Nollen & Axel, 1996; Van Dyne & Ang, 1998). There are very few systematic studies on the effects of temporary contracts and findings from the available studies are inconsistent (Beard & Edwards, 1995; Kochan, Smith, Wells, & Rebitzer, 1994). For example, empirical studies comparing permanent and temporary workers reveal negative effects of temporary work status on work behavior (Moorman & Harland, 2002), while other studies do not find differences between the behavior of permanent and temporary workers (Pearce, 1993; Van Dyne & Ang, 1998). Therefore, it can be stated that the assumed negative effects of temporary status seem to be the result of speculation rather than empirical research (Belous, 1989; Feldman, 1995).

1.4 DEALING WITH THE INCONCLUSIVE RESULTS

Temporary employment relationships are regarded as one of the most important issues in the current labor market and their effect on employee behavior seems obvious. Nevertheless, the existing research yields conflicting findings that do not lead to a clear statement about these effects. This raises questions such as: Why did the research that has been carried out so far lead to these inconclusive findings? In addition, how can we deal with them in research? This thesis tries to answer these questions by focusing on two specific issues: (1) the kind of employee behavior studied; and (2) how this behavior can be explained theoretically. Above that, the possible theoretical explanations are examined empirically.

The kind of behavior that thesis mainly examines is *Organizational Solidarity*, referring to the application of a general definition of solidarity – contributing to the common good (Hechter, 1987; Lindenberg, 1998) – to organizations. Organizational Solidarity is shown in the interpersonal relationship between two actors, Ego (the focal actor) and Alter (the other actor), within an organization. In the studies, Ego is the employee whose solidary behavior is studied. The person to whom Ego shows (lack of) solidarity is named Alter and may be the supervisor or a co-worker. If Alter is the supervisor, the term *vertical solidarity* is used and *horizontal solidarity* is used when Alter is a co-worker. When Ego and Alter are in a professional work situation with each other, the common good can be the completion of a task on which they are both working. Usually, tasks are grouped into teams because there are gains from cooperation, for instance, when a task requires the simultaneous effort of more than one person. At the same time, when two or more people are interdependently working on a task, the problem of solidarity arises. The problem is that, in many situations, both of them will be better off if their common task is completed. At the same time, their individual return is lower when they contribute their time and effort than when they let others do the work. Solidarity between Ego and Alter can be understood as a dilemma situation. If Alter asks Ego for assistance, there is no guarantee that Alter will also be solidary with Ego. Ego can offer assistance and Alter may take advantage of this situation by accepting Ego's assistance and not offering help in return. Therefore, solidarity between Ego and Alter requires a certain level of trust between Ego and Alter (Coleman, 1990; Buskens, 2002).

Recent studies argue that the creation and maintenance of solidarity between actors depends on the extent to which the actors are embedded (Granovetter, 1985; Raub, 1997; Buskens, 2002; Buskens & Raub, 2002). The *social context* in which individual actors are embedded is comprised of their ongoing dyadic relationships

with others and the broader networks of relationships (Granovetter, 1985). The two mechanisms through which embeddedness may affect solidarity are labeled *learning* and *control*^{1.3} (Buskens, 2002; Buskens & Raub, 2002). Table 1.2 summarizes how learning and control are enabled through dyadic and network relations.

TABLE 1.2
Four forms of embeddedness

		LEVEL	
		DYAD	NETWORK
MECHANISM	LEARNING	Information about Alter from own past experiences	Information from third parties about their experiences with Alter
	CONTROL	Possibilities to sanction or reward Alter oneself	Possibilities to sanction or reward Alter through third parties

Source: Buskens & Raub (2002)

Table 1.2 shows that Ego can learn about Alter through past interactions or through mutual acquaintances in their networks and that Ego can control Alter when their relationship continues in the future or when their relationship is embedded in a larger network. *Temporal embeddedness* refers to the past and the future of Ego and Alter; *network embeddedness* refers to relationships that Ego and Alter have with third parties^{1.4}.

^{1.3} In this thesis, the term ‘control’ is used to refer to ‘control of the behavior of other through the provision of positive and negative sanctions’. This meaning of the term ‘control’ is distinguished from ‘control variables’ in the multivariate analyses of the studies, by referring to them as ‘statistical control’.

^{1.4} Solidarity between actors can also be affected by institutional embeddedness (Raub, 1997). This form of embeddedness is not taken into account in this thesis.

1.5 SOLIDARITY AND EMBEDDEDNESS^{1.5}

1.5.1 TEMPORAL EMBEDDEDNESS

An ongoing dyadic relationship between Ego and Alter enables solidarity in two distinct ways: through prior interactions and behavior between the same two actors (*shadow of the past*) and through expectations about future interactions (*shadow of the future*) (Raub, 1997; Buskens, 2002; Batenburg, Raub, & Snijders, 2003).

LEARNING: SHADOW OF THE PAST

Learning refers to the use of information that Ego attains from past interactions with the same Alter. Based on these own experiences, Ego knows more about Alter's behavior. If Alter has shown solidarity in past interactions, Ego may expect that Alter will show solidary behavior again in similar interactions in the future (Granovetter, 1985; Coleman, 1990). Learning in a dyadic relationship takes place when Ego acquires information about Alter. Through past interactions with the same Alter, Ego learns directly about the ability and willingness of the other person. Therefore, if there is a shadow of the past between Ego and Alter, Ego knows whether Alter is a skilful and reliable partner or not. Based on this information about Alter, Ego can choose to be solidary with Alter or not. For example, when Alter requests Ego's help, Ego can take earlier interactions with Alter into account in the consideration to help Alter. Past solidary behavior of Alter may affect the extent to which Ego will be solidary toward Alter. Besides the information effect of past interactions, there is the possibility that Ego and Alter have made relation-specific investments as the relationship continues. Such investments are valuable to Ego and Alter but lose their value when their relationship ends. In a work relation, this may be the case when Ego and Alter have worked together for some time and know about their peculiarities and how they can best treat each other. This may also make their collaboration easier. Learning and investments through past interactions may affect the level of solidarity between Ego and Alter.

CONTROL: SHADOW OF THE FUTURE

Control refers to the fact that Ego realizes that Alter may have short-term incentives for abusing trust but that some long-term incentives for Alter are under control of Ego. Ego can control Alter directly by punishing or rewarding actions of Alter. The mechanisms underlying control are also referred to as reciprocity (Gouldner, 1960; Blau, 1964; Voss, 1982) or conditional cooperation (Taylor, 1987). Ego can control

^{1.5} This section is based on Buskens & Raub (2002).

the behavior of Alter in a dyadic relationship if it is likely that they will meet each other in the future. If there is the expectancy of future interactions between Ego and Alter, Ego can control Alter by sanctioning: punishing inappropriate and rewarding appropriate behavior of Alter^{1.6}. These sanctions have credibility for Alter if Ego has the possibility and incentive to effectively use them. A common future between Ego and Alter is a way to make this possible if Ego and Alter are in a situation in which Alter needs Ego's help; Ego's decision to provide assistance may be different if there is a common future with Alter than when their relationship will end shortly after that.

1.5.2 NETWORK EMBEDDEDNESS

Learning and control are also possible when the relationship between Ego and Alter is part of a larger network of relationships.

LEARNING THROUGH NETWORKS

When there have not been previous interactions between Ego and Alter, Ego's willingness to be solidary toward Alter may be low. But, if there is a third party who has experiences with Alter and who belongs to Ego's network, Ego can gather information about Alter through their indirect link with the third party. This is for example the case in a workgroup to which a new person is added. If this person has been working somewhere else in the organization, then the members of the workgroup can contact those people to acquire information about their new colleague. As a result, information is gathered about the reputation of Alter and experiences that others have had with the same person carry over from one workgroup to the other. The learning mechanism is also at work if Ego has not interacted with Alter before, but others in the team have. Again, the other people can inform Ego about their experiences with Alter. In both examples, it is required that Ego trusts the third party to provide true information about Alter.

CONTROL THROUGH NETWORKS

Ego can control Alter's behavior more easily, if Ego and Alter are in a relationship that is also part of a larger network of mutual acquaintances. The production of a common good requires contributions of a number of people. When there are more connections between the actors that have an interest in the good, they have more possibilities to provide positive and negative sanctions to each other. For instance, when Alter does something that hurts Ego, Ego can choose to inform the third party

^{1.6} The term 'sanction' refers to sanctions that are positive (rewards) or negative (punishments).

about Alter's behavior and give Alter a bad reputation. This may be a bad thing for Alter, because the result can be that other members of the network choose not to be solidary toward Alter. Ultimately, Alter may be excluded from the group and no longer enjoy the benefits of it. Therefore, people prefer to have a good reputation, and as a result Alter will have an incentive not to hurt Ego when they are embedded in a larger network. The more Ego and Alter are embedded in a network with third parties, the higher the control capacity they have. Therefore, the denser the network of which Ego and Alter are part, the higher the trust between them (Weesie, Buskens & Raub, 1997). These dense networks can create strong group pressure on individual members and may affect solidary behavior of the individuals in a team.

1.5.3 TEMPORARY EMPLOYMENT RELATIONSHIPS AND EMBEDDEDNESS

Theoretical considerations about the link between embeddedness and solidary behavior of employees are used to study temporary employment relationships. This section provides an outline of how this relates to current research and how it may solve some of the inconclusive research findings. The general question formulated in section 1.1 can now be translated into the more specific question: *Can temporal and network embeddedness account for the inconclusive findings regarding the effects of temporary employment relationships on solidary behavior of employees?*

The first research problem that this thesis focuses on is to what extent and how solidary behavior of temporary employees toward their organization is influenced by their level of temporal and network embeddedness. The question is asked whether solidarity from temporary employees can be understood by taking these two forms of embeddedness into consideration. This is dealt with in Chapter 2. In this chapter, it is studied how their temporal embeddedness affects solidary behavior of temporary workers by examining the effects of the length of the past and the expected future of their employment relationship. Effects of network embeddedness are investigated by examining the formal and informal network of these temporary employees. Therefore, Chapter 2 does not take the employment relationship as a given (employees are either temporary or permanent) but investigates whether the behavior of temporary employees changes over the course of the contract.

The second issue that is dealt with in this thesis concerns the kind of employee behavior studied. Solidary behavior refers to the behavior that actors show in their relationship with others. Therefore, to study this kind of behavior, it is necessary to look at how these types of behavior influence each other. Most kinds of

cooperative employee behavior studied in organizations – such as cooperation (Barnard, 1938; Smith, Carroll & Ashford, 1995), organizational citizenship behavior (Organ, 1988) and loyalty (Hage, 1980) – does not include the behaviors of other actors explicitly and focuses on the individual employee instead. Hence, earlier studies tend to focus on the behavior that Ego shows toward Alter and not on the behavior that Alter shows toward Ego and how this may affect their mutual solidarity. Chapter 3 focuses on this issue by examining Organizational Solidarity. Organizations consist of horizontal and vertical relationships (Smith et al., 1995): relationships between employees on the same hierarchical level and hierarchical relationships between supervisors and employees. Horizontal and vertical relationships are distinguished from each other since employees are not necessarily solidary in both dimensions at the same time and to the same extent. Chapter 3 aims at investigating whether reciprocity can explain Ego's solidarity toward others. Since Ego may be involved in horizontal and vertical relationships, it is examined if these two dimensions of Organizational Solidarity do differ from each other empirically.

Central to Organizational Solidarity is that the behavior of Ego is influenced by the behavior of Alter and vice versa. In the relationship between Ego and Alter, temporal embeddedness refers to the interactions between them in the past and the likelihood that there will be interactions between them in the future. Studies of the effects of temporary employment relationships on employee behavior usually compare the behavior of permanent and temporary employees. Most studies implicitly assume that employees with a temporary employment relationship have a short-term relationship with others in the organization and that they therefore will show certain types of behavior. This assumption may not be valid and needs to be revised. First, relationships that temporary and permanent workers have with others do not necessarily differ in duration for several reasons. Permanent workers that just started to work for a particular organization may have a short past with others. Employees may also be transferred from one place to another from time to time, resulting in relatively short-term relationships with others in the organization. What is more, permanent employees may be considering leaving the organization, thus decreasing the likelihood of future interactions with others. Finally, taking into account that employee behavior may be affected by the behavior of others, it is also possible that a permanent employee has short-term relationships with others, because the others are temporary workers, are transferred to another section within the organization, or are about to leave the organization. To summarize, it is stated that temporal embeddedness differs from the distinction between temporary and permanent employment relationships. A second revision has to do with the behavior

that others – supervisors or co-workers – show toward the employee. It is assumed that solidary behavior of Ego depends on the behavior of Alter. This assumption has consequences for the expected effects of temporal embeddedness. Temporal embeddedness does not only mean that Ego and Alter are in a relationship of certain duration but also that they can show different types of behavior during the course of the relationship. Being in a solidary relationship for a long time with Alter may therefore increase Ego's solidarity toward Alter. Nevertheless, when Ego and Alter are in an unsolidary relationship for a long time, the effects of relationship length may be negative. Therefore, it is stated that temporal embeddedness refers to the combination of length of the relationship and the Alter's solidarity. Chapter 4 investigates to what extent these ideas about temporal embeddedness hold.

An additional source of solidarity between actors may come from the network in which they are embedded. Networks differ with regard to their structure (the way in which actors are connected to each other) and content (the type of relationships present in a network). The effects of network content on solidarity are studied in this thesis. Many organizations are formalized to a certain degree to manage the workflow. Formalization refers to the organizational blueprint in which tasks are prescribed and grouped into formal jobs and positions. The network of formal relationships between team members is aimed at completing the team task. The contributions of every member are needed but not guaranteed. Therefore, the team members will monitor each other to make sure that everyone is doing their job. Non-contributors are expected to be punished while the ones who contribute can expect to be rewarded. The formal network will thus be formed by relationships in which individual members control each other to reach the team's goal. Within teams informal relationships may develop that connect employees through activities that do not have to be work-related. For instance, people may drink coffee with each other and chat about mutual interests. Even though the principal aim of these relationships has nothing to do with the tasks of a team, there may be consequences for the level of solidarity that members show toward each other. When there are more informal relationships within a team, there may be more trust among the individual members. This may increase the solidarity that the individuals show toward each other. Chapter 2 and 5 investigate the influence that formal and informal ties have on solidarity of employees.

To summarize, the studies in this thesis aim at investigating how the social context of employees, in terms of their temporal and network embeddedness affects the extent to which they show solidarity toward others. Three main facilitators of solidary types of behavior of employees are studied. First, solidary types of behavior

are directed at specific others, therefore the solidarity that Ego shows toward Alter may be influenced by the solidarity shown by Alter toward Ego (Chapter 3). Second, the effects of the past and the future that employees have with an organization may affect their solidarity. Reciprocation of solidary types of behavior between Ego and Alter takes place as their relationship develops and may affect considerations about future interactions (Chapter 2 and Chapter 4). Third, solidarity of employees is assumed to be affected by the formal and informal network relationships that connect them with others in the team (Chapter 2 and Chapter 5).

1.6 RESEARCH STRATEGY AND DATA SOURCES

1.6.1 RESEARCH STRATEGY

The relationship between the use of temporary employment relationships and solidary behavior of employees is examined with data from multiple sources. Data sources that have been gathered with different research methods are combined to study one problem, which is a form of triangulation (Denzin, 1978; McGrath, 1982; Scandura & Williams, 2000). By using information from different sources and making use of multiple measures to address similar research problems, the principal goal of triangulation is to generate a more robust and generalizable set of findings (Denzin, 1978; Scandura & Williams, 2000). How robust the findings of a study are, can be investigated by using more than one dataset. If the relationship is found in datasets that differ in method, there may be more certainty about the finding.

1.6.2 DATA SOURCES

The empirical chapters in this book are based on four different data sources. The datasets are: (1) a survey held among university employees (described in: Dekker, 2000), (2) the Solidarity at Work Survey (for an overview of the questionnaire: Lambooij, Sanders, Koster, Emmerik, Raub, Flache, & Wittek, 2003) that was conducted among employees in different organizations, (3) a vignette study (discussed in Chapter 4 of this thesis), and (4) a dataset gathered by the Workplace Ethnography Project, containing team-level data (this dataset is discussed in: Hodson, 1998). Table 1.3 provides an overview of the datasets, their level of analysis, and the chapters in which they are used.

TABLE 1.3
Overview of data sources and levels of analysis by chapter

Chapter	Data source	Level of analysis	n
2	University Survey (Dekker, 2000)	Individual employees	262
3	Solidarity at Work Survey	Individual employees	674
4	Solidarity at Work Survey	Individual employees	736
	Vignette Study	Vignettes	1040
5	Solidarity at Work Survey	Individual employees	736
	Workplace Ethnography Project (Hodson, 1998)	Teams	154

1.6.3 KINDS OF ORGANIZATIONS

The datasets are gathered across different organizations. The survey among university personnel is done at a Dutch university. The data from the Solidarity at Work Survey are gathered at 15 different organizations. Table 1.4 provides an overview of the economic sector, type of organization, number of respondents, percentage of temporary workers, relative number of female employees, and mean educational level – measured on a scale from 1 (no education completed) to 9 (Ph.D. level completed) – per organization in the Solidarity at Work Survey.

TABLE 1.4
Overview of the organizations in the Solidarity at Work Survey

Economic sector	Organization	Number of respondents	Percentage temporary workers	Percentage females	Mean educational level
Publishing	Pressing plant (Holland)	67	16	17	3.75
	Pressing plant (Belgium)	99	4	35	n.a.
Rental companies	Housing foundation	14	7	36	4.93
ICT	Supportive staff university	11	18	0	5.64
Commercial services	Engineering firm	17	12	6	4.71
	Consultancy firm	15	20	53	6.87
	Project organization	89	6	53	7.64
Public administration	Ministry	266	8	33	6.08
	Military	200	36	12	5.20
	Municipality	122	8	39	4.97
	Governmental organization	160	9	45	5.76
Healthcare	Nursing home	98	8	93	4.70
Culture, sports & recreation	Art foundation	17	6	65	6.41
	Recreation center	16	56	73	4.60
Education	University	156	34	52	7.07
	Total	1347	16	40	5.76

n.a. = data not available

Table 1.4 shows that the organizations participating in the Solidarity at Work Survey are from different economic sectors. The overall response rate is 52 percent. Response rates vary between the organizations. The university has the lowest number of returned questionnaires (24 percent) and the pressing plant in Belgium has the highest response rate (74 percent). It should be noted that these organizations are not a representative sample of all organizations in the Netherlands. There is a lack of industrial organizations present in the sample; most of the organizations are service organizations, for example university departments. The employees also have a relatively high mean level of education. Therefore, the findings based on these data should not be generalized too quickly to other types of organizations.

Organizational type is not a major issue in this thesis, because the theories that are tested in this book concern individual employees and how their behavior is influenced by their relationships with others. No hypotheses are tested concerning the organizational level. To examine possible effects at the organization level, statistical control variables are added to the models with which the hypotheses are tested. In addition to the Solidarity at Work Survey, data from the Workplace Ethnography Project are used to test hypotheses. These data are gathered across a large sample of organizations, including many manufacturing organizations. The results from the different datasets are compared throughout the studies in this thesis.

1.6.4 SOLIDARITY AT WORK SURVEY

The main source of information this book is the Solidarity at Work Survey. For each of the organizations, data are gathered with an organization-specific questionnaire. The Solidarity at Work Questionnaire consists of so-called modules that contain a set of questions about a certain topic. Examples of these modules are: ‘solidary behavior’, ‘quality of relationships’, and ‘organizational commitment’. A subset of the complete questionnaire is used in each of the organizations because it would be too time-consuming to administer all the modules in every organization (the Solidarity at Work Questionnaire contains 900 items in total). The module containing questions about solidary behavior is part of all questionnaires but some of the independent variables may not be available for all of them. Therefore, some questions cannot be answered with information from the total dataset. Depending on the availability of independent variables studied, the decision is made to include them in the study or not. How the different organizations are used in the different chapters is shown in Table 1.5. Table 1.5 shows that the information gathered three organizations – the pressing plant in Holland, the pressing plant in Belgium, and the project organization – are not examined. The questionnaires prepared for these organizations did not contain the modules required for this study.

TABLE 1.5
Overview of the organizations by chapter

	Chapter 3	Chapter 4	Chapter 4	Chapter 5
	Survey	Survey	Vignette	Survey
	data	data	data	data
Pressing plant (Holland)				
Pressing plant (Belgium)				
Housing foundation	○	○	○	○
Supportive staff university		○		○
Engineering firm	○	○		○
Consultancy firm	○	○	○	○
Project organization				
Ministry	○	○	○	○
Military	○		○	
Municipality	○	○		○
Governmental organization		○		○
Nursing home		○		○
Art foundation	○	○		○
Recreation center	○	○	○	○
University			○	

1.7 OVERVIEW OF THE BOOK

This book contains studies in which the effects of temporary employment relationships on solidary types of behavior of employees are examined by taking the temporal and network embeddedness of employees into account. The chapters are structured as articles that have been submitted to journals and it is possible to read them separately. Chapter 2 examines the effects of temporal and network embeddedness on Organizational Citizenship Behavior (OCB; Organ, 1988) of junior researchers at a university. In this chapter it is studied how this kind of behavior changes over the course of a temporary contract and how it is affected by relationships that these employees have with their co-workers and supervisors. To study the influence of embeddedness on the behavior of Ego more precisely, Chapter 3 develops a measure of Organizational Solidarity by formulating and testing hypotheses about the reciprocal nature of solidarity and comparing it to Organizational Citizenship Behavior. A distinction is made between vertical and horizontal Organizational Solidarity. In the remainder of the book, the focus is on

horizontal employee solidarity. Chapter 4 provides insight into the effects of temporal embeddedness on solidarity toward co-workers. The question is asked whether temporary and permanent employees differ with respect to their horizontal solidarity. In Chapter 5, the effects of network embeddedness on solidarity toward co-workers are examined. It is argued that the use of flexible employment relations lowers the possibilities of learning and controlling through temporal embeddedness. It addresses the question whether networks can make up for this lack of temporal embeddedness and can create solidarity instead. Hypotheses are tested about the effects of formal and informal networks of employees on their solidarity toward co-workers. Finally, Chapter 6 summarizes and discusses the findings of the chapters, deals with practical implications, and provides suggestions for future research.

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2

SOLIDARITY OF TEMPORARY WORKERS

The Effects of Temporal and Network

Embeddedness on Solidary Behavior of Ph.D.

Students^{2.1}

2.1 INTRODUCTION

Changes in the organizational and occupational structure of organizations have led to increasing demands by employers for solidarity among their employees (Janssens & Brett, 1994; Sanders, 2000; Sanders, Van Emmerik, & Raub, 2002). As a result of decentralization and empowerment, many employees bear more responsibility for the quality of their work and output than ever before. Employers expect their employees to cooperate with each other and direct their mutual efforts toward the organization as a whole to reach the organizational goals (Schaubroeck & Ganster, 1990). Such contributions to the common good refer to solidary behavior from the employee. The type of employment relationship – permanent or temporary – is expected to influence the level of solidarity shown by the employees (Tsui, Pearce, Porter, & Tripoli, 1997). Given the continued increase in the demand for flexible contracts, the relation between temporary contracts and employee behavior is of particular interest (Davis-Blake & Uzzi, 1993; Kalleberg, 2000).

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Employee solidarity can be either horizontal or vertical. Horizontal solidarity refers to solidarity among employees and vertical solidarity reflects employees' efforts directed at the organization or in their relationships with their supervisors. In this chapter we address vertical solidarity as reflected by Organizational Citizenship Behavior (OCB; Organ, 1988). The concept of OCB is defined as employee behavior that is discretionary, not formally rewarded, and benefits the functioning of the organization (Organ, 1988). Therefore, OCB refers to general types of solidary behavior that need not to be directed at specific others within the organization.

We study OCB from a social embeddedness perspective, which holds that the social context individuals are embedded in influences their solidarity (Raub, 1997). In this chapter we focus on temporal and network embeddedness. Temporal embeddedness means social relations are time-specific and behavior within relationships is influenced by the shared past and future of the parties involved. Network embeddedness refers to the fact that relations between people are often embedded in larger systems of social relations (Granovetter, 1985; Raub, 1997).

This chapter addresses the effects of temporal and network embeddedness for a specific group of temporary employees: Ph.D. students working at a Dutch university. Ph.D. students are junior researchers employed by the university to work on a research project. The normal length of employment for Ph.D. students is four years. The bulk of their job responsibilities consists of conducting research, but they also participate in educational activities. They are part of the university for a relatively long period, particularly as compared to other temporary employees. They are not completely external to the university organization, and have no certainty about their future with the university once their projects are finished. The question in this chapter is: *Can temporal and network embeddedness explain the solidarity that Ph.D. students at a Dutch university show toward their organization?*

The chapter is structured as follows. In section 2.2 we define employee solidarity. In section 2.3 we discuss the effects of temporal and network embeddedness and formulate the research hypotheses. Section 2.4 describes the data, and in section 2.5 the hypotheses are tested. The chapter closes with a discussion of the results, practical implications, and possibilities for further research.

2.2 SOLIDARITY

Solidarity means putting effort into producing a collective good without any direct compensation (Hechter, 1987; Lindenberg, 1998). Within organizations, employees can contribute to the collective good in two ways: through in-role and extra-role performance. In-role performance means performing required duties and

responsibilities; extra-role behavior refers to the performance of discretionary behavior that goes beyond the formal job description (Smith, Organ, & Near, 1983; Williams & Anderson, 1991). The most extensively studied form of extra-role behavior is Organization Citizenship Behavior (OCB) (Bateman & Organ, 1983; Smith, Organ, & Near, 1983; Morrison & Phelps, 1999). OCB is defined as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in aggregate promotes the effective functioning of the organization. By discretionary, we mean that the behavior is not an enforceable requirement of the role or job description, that is, the clearly specifiable terms of the person’s employment contract with the organization; the behavior is rather a matter of personal choice, such that the omission is not generally understood as punishable” (Organ, 1988: 4). This definition is a specific form of the general definition of solidarity. For the Ph.D. students, in-role behavior consists of writing a thesis and participating in educational activities. In this chapter, extra-role behavior of Ph.D. students entails activities directed at improvement of the quality of the research and education provided by their faculty. In this chapter, we use OCB as this form of extra-role behavior to study the solidarity of Ph.D. students with the organization they are employed in.

2.3 SOCIAL EMBEDDEDNESS AND OCB

Many studies have identified factors at the level of the individual, team, and organization that influence OCB (Podsakoff, MacKenzie, Paine & Bachrach, 2000). The embeddedness approach offers potential explanations for these factors. This approach states that cooperative behavior such as OCB arises under specific conditions. This is also emphasized in the social exchange model (Tsui et al., 1997). To some degree, employees are free to choose to put effort into engaging in OCB. Engaging in OCB may well be based on the expected returns for their investment, such as intrinsic, material or social rewards. As Tsui et al. (1997) note, an employer may react to an employee’s effort with greater consideration for the employee’s well-being or with investments in the employee's career at the organization. These mutual exchanges take place within the social context or social embeddedness of the employment relation. By examining the effects of various kinds of social embeddedness, we can gain insight into how they affect OCB. In the following sections, we discuss the expected effects of two types of social embeddedness. It is important to note that involvement in OCB entails costs for the individual employee. Showing OCB will be more effective if co-workers show it as well. When they are new to the organization Ph.D. students are not sure about the behavior of their co-

workers and this may affect their level of OCB. Therefore, gathering information about the behavior of others increases OCB. Social relations that have a defined duration and are part of a larger network of relations make it possible to gather information (Granovetter, 1985; Hechter, 1987; Raub, 1997; Buskens, 2002). We thus expect that OCB will be positively influenced by both temporal and network embeddedness.

2.3.1 TEMPORAL EMBEDDEDNESS

Temporal embeddedness refers to the duration of relations among individuals. Actors usually interact more than once, resulting in a joint past and future. The history of the relationship makes it possible to gather information about each other's behavior. Based on this information, actors can estimate the trustworthiness of others. Positive past experiences increase mutual solidarity (Raub, 1997). Solidarity also increases if people can learn about each other's preferences and behavior (Deutsch, 1949), and if there has also been interaction between them in the past (Frey & Bohnet, 1995). The history of the relationship also makes it possible to make relationship-specific investments. These investments enhance the attractiveness of the relationship for both parties and lose their value when the relationship ends. Once relationship-specific investments have been made, breaking off the relationship becomes costly. As a result, relationship-specific investments increase mutual solidarity (Raub, 1997).

Social relations are also influenced by the future of the actors involved. A shared future promotes solidarity through conditional cooperation (Axelrod, 1984). Conditional cooperation can be summarized as follows: "if you cooperate, I will cooperate, if you hurt me, I will hurt you" (Spicer, 1985: 521). Conditional cooperation increases the long-term costs of non-solidarity (Burt & Knez, 1996). The threat of future sanctions and the possibility of approving behavior increases solidarity between actors. Actors can decide to cooperate with others upon their first meeting, and can also choose to cooperate only if the other cooperates as well. Through this process, the solidarity of one person is reciprocated by the solidarity of another. The extent to which solidarity can be reciprocated within an organization depends on the duration of the relationship between employers and employees, as well as among the employees themselves (Spicer, 1985).

In the case of temporary contracts, such as the Ph.D. contracts considered here, the past and future of relationships have opposing effects. As the relationship develops, there are more opportunities for actors to show solidarity to one another. Solidarity can be expected to increase as actors have a longer history together. In contrast, it can be argued that solidarity toward the organization will decrease if the

employment relationship is coming closer to the end, since there are fewer possibilities for sanctioning and approving actions of others. These effects can be defined as follows. First, it can be expected that solidarity needs time to evolve. Solidarity will be low during the start of the relationship, due to the considerable costs of solidarity. At that point, an actor will not be able to estimate whether the other actor will act opportunistically (Kramer, Brewer, & Hanna, 1996). As the relationship unfolds, uncertainty about the trustworthiness of others decreases as more information is gathered. Although solidarity is likely to increase, there will be a limit to this growth. In a temporary relationship, it is likely that solidarity between actors will decline if the likelihood of future interaction decreases. In summary, we expect a curvilinear relationship between the duration of the Ph.D. contract and the amount of solidarity, and formulate the following hypothesis:

Past and Future Hypothesis (Hypothesis 2.1):

The solidarity that Ph.D. students show toward their faculty has a curvilinear relation to the duration of the contract: there will be less solidarity in the beginning and end than in the years in between.

2.3.2 NETWORK EMBEDDEDNESS

Temporal embeddedness refers to the effects of past and future interactions on solidarity. Network embeddedness pertains to the effects of the amount and quality of relations people have with others. People have relations with each other, that are embedded in larger social structures. Networks provide information and serve as means for the direct and indirect sanctioning of non-solidarity actions. Social actions and outcomes are influenced by dyadic and larger structures of social relations (Granovetter, 1985). These social relations transform into structures of interacting actors who are dependent upon each other to reach their goals (Wasserman & Faust, 1994). As a result of the interactions with individuals, networks are the means that actors may use to reach their goals (Wasserman & Galaskiewicz, 1994). The network approach links individual actions and behavior to the contexts they occur in. Such organizational phenomena as motivation, turnover, and leadership have been studied successfully from a network perspective (Krackhardt & Brass, 1994). Network embeddedness can be either formal or informal. Formal networks are impersonal and explicit, whereas informal networks are personal and implicit (Smelser, 1976; Powell & Smith-Doerr, 1994). In order to understand organizational behavior formal and informal networks should be taken into account (Nohria & Eccles, 1992).

The formal network of Ph.D. students refers to the formal organizational position designed by their departments. These formal positions are based on the structure of the workflow (Brass, 1981) that depends on the organizational policy. The most important services universities provide are education and research. Although departments try to perform well regarding both of these, they differ in the emphasis they place on each of them. The orientation of the department affects the Ph.D. students as follows. Within a research-oriented environment, good research performance is important. Since the main part of the Ph.D. student's job consists of conducting research, we can expect a Ph.D. student to exhibit more effort toward a research-oriented department since their work is more central to its output. More generally, the more central the employees' tasks are to the primary process of the organization, the greater the solidarity of the employees toward the organization. This leads to the following hypothesis:

Formal Network Hypothesis (Hypothesis 2.2):

The solidarity that Ph.D. students show toward their faculty is positively influenced by formal network embeddedness: greater congruence between the policy of the organization and the tasks of temporary employees will result in more solidarity.

Informal networks consisting of personal relations also shape the behavior of people. Within organizations, the most important relations employees have are with their supervisors and co-workers. Good relationships with co-workers are important for employees. For instance, acceptance in a group is one of the most important informal rewards on the work-floor (Pfeffer, 1982). Compliance to group norms may be rewarded with social support from the group. Informal group norms influence the behavior of group members (Coleman, 1994), resulting in positive and negative behavior toward the organization (Roethlisberger & Dickson, 1939; Spicer, 1985). Within departments where Ph.D. students have good relations with each other, we can expect an atmosphere where department matters are discussed. If this is not the case, it is unlikely that Ph.D. students will be willing to change things for the better within the department. Based on the finding that good relationships between employees are related to good relations with management (Hodson, 1997), we expect positive relations with fellow Ph.D. students to result in higher levels of solidarity toward the department.

The quality of the relation with the supervisor is also important for employee behavior. Solidarity toward the organization largely depends on the extent to which supervisors are able to create relational contracts with their employees (Leana & Van Buren, 1999). Due to mutual dependency, there is some uncertainty inherent in

the relations between supervisors and Ph.D. students (Kramer, 1996). Ph.D. students depend on their supervisors, for instance, for help with their work and career. Supervisors, in turn, depend on their Ph.D. students, especially if the students gather data that are used by their supervisors as well. Whether these data are gathered correctly is a matter of trust (Kramer, 1996). This mutual dependency increases the importance of solidarity between Ph.D. students and supervisors. We therefore expect a high quality relation between them to increase solidarity.

Informal Network Hypothesis (Hypothesis 2.3):

The solidarity that Ph.D. students show toward their faculty is positively influenced by informal network embeddedness, in the sense of high-quality relations with co-workers (hypothesis 2.3a) and the supervisor (hypothesis 2.3b).

2.4 METHOD

2.4.1 PROCEDURE

As part of a study on the careers of university employees (Van Emmerik & Hermkens, 1996), all staff members of the 14 departments at a Dutch university have been asked to complete questionnaires. The research population consists of 3054 persons, 47 percent are female and 53 percent male; 1,232 people have responded, i.e. a response rate of 40.3 percent (Dekker, 2000). This study uses the data from Ph.D. students ($n = 262$). The 262 Ph.D. students are employed at four different university clusters: Liberal arts, Natural sciences, Social sciences, and Biomedical sciences. (see Appendix A for an overview of the clusters). The group of Ph.D. students who have responded is 57 percent male and 43 percent female. On average, they are 28.1 years old (standard deviation 3.36), and have worked at the university for an average of 2.9 years (standard deviation 1.2). Of the respondents, 63 (24 percent) are employed at Natural science departments, 123 (47 percent) at Biomedical departments, 32 (12 percent) at Liberal arts departments (12 percent), and 44 (17 percent) at Social science departments. There are some age and gender differences between the departments. The Social science departments employ the highest percentage of female Ph.D. students (73 percent), whereas the lowest percentage is found at the Natural science departments (32 percent). On average, the Ph.D. students employed at the Natural science departments are the youngest (26.9 years), and those at the Social science departments the oldest (29.3 years) (see Table 2.1).

TABLE 2.1
Descriptive statistics of the faculties

Faculty	Number of Respondents	Percentage women	Mean age	Graduation/ professor
Liberal arts	32	56	28.6	.069
Natural sciences	63	32	26.9	.089
Social sciences	44	73	29.3	.072
Biomedical sciences	123	64	28.1	.076
Total	262	57	28.1	.077

2.4.2 MEASURES

DEPENDENT VARIABLE

Solidarity is measured using five items of the Organizational Citizenship Behavior questionnaire of MacKenzie, Podsakoff, and Fetter (1991). An example of an item is: “In my job I often make suggestions to improve the quality of research or education.” The items are measured on a 5-point scale, ranging from “totally disagree” to “totally agree.” Negatively worded items are reverse-coded. Taken together, the five items constitute a reliable scale (Cronbach’s Alpha = .74). A higher score reflects a higher level of solidarity toward the organization.

DEPENDENT VARIABLES

To measure *temporal embeddedness*, Ph.D. students are clustered into year groups (according to the year their research started). The year groups vary from 1994 to 1998. First-year Ph.D. students comprise 13 percent of the respondents, 25 percent are in their second year, another 25 in their third year, and 27 percent in their fourth year. An additional ten percent of the respondents are in their fifth year, meaning they have received an extended contract to finish their projects. We do not have information about the quality of the past that the Ph.D. students have with others. We therefore assume that Ph.D. students who have good experiences in their first year, will continue to work on their project. *Formal network embeddedness* is measured as department orientation. It is assumed that the formal networks of departments differ with regard to how central the work of the Ph.D. students is. The measure for research orientation is the amount of Ph.D. degrees granted by each professor (the relative number of Ph.D. degrees at a department). The strength of ties between Ph.D. students and their co-workers and supervisors measure *informal network embeddedness*. This varies from 1 (no tie) to 4 (strong tie).

STATISTICAL CONTROL VARIABLES

Research shows that several factors, including *age* and *gender*, influence OCB (Podsakoff et al., 2000). Older employees and female employees show less OCB than other groups. Therefore, we examine the effects of age and gender. Previous studies also note a negative relation between number of years in the organization and OCB, which is therefore *year of entry* is also included in the analysis. This variable differs from the temporal embeddedness variable since it does not distinguish between the effects of past and future. Since many studies note a relation between organizational commitment and OCB, we also add *organizational commitment*. Organizational commitment is measured with four items on a 5-point scale (Mowday, Steers & Porter, 1979). One of the items is: “I have the feeling that I belong to [name university]”. The four items constitute a reliable scale (Cronbach’s Alpha = .84). Finally, we check whether the number of hours that Ph.D. students work every week affects their OCB. Appendix B provides an overview of the scales and questions used in this study.

2.4.3 RESULTS

Table 2.2 presents the means, standard deviations, and correlation coefficients of the variables measured among the Ph.D. students. Multilevel analysis (Bryk & Raudenbush, 1992; Snijders & Bosker, 1999) is used to test the first two hypotheses, which state that the level of solidarity is related to the temporal and network embeddedness of the Ph.D. students. Determinants of solidarity are examined at both the individual and department levels. Multilevel analysis divides the variance in the dependent variable into variance that can be accounted for by variables at a higher level, here the department-level variables of formal network embeddedness (the relative number of Ph.D. degrees granted), and the variance that can be accounted for by lower-level variables, in this case individual-level variables. The individual-level variables include temporal embeddedness, informal network embeddedness, and the statistical control variables of organizational commitment, age, gender, and the number of working hours. Table 2.3 presents the results of the multilevel analyses. In Model 1, the effects of the statistical control variables are reported. The temporal embeddedness variables, including both the year-group effect and the tenure effect, are added in Model 2. The effect of informal network embeddedness, the strength of ties with co-workers and supervisors, is entered in Model 3. Finally, in Model 4, the higher-level variable of formal network embeddedness (number of Ph.D. degrees granted) is added.

TABLE 2.2
Means, standard deviations, and correlations

	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.
1. Solidarity	3.36	.64								
2. Commitment	2.77	.78	.04							
3. Hours per week	37.75	4.41	.07	-.01						
4. Gender	.57	.50	-.11	-.01	-.00					
5. Age	28.10	3.34	-.11	.05	-.31**	-.03				
6. Year started	1996	1.25	.01	-.05	-.07	-.00	-.36**			
7. Tie supervisor	1.03	.76	.13**	.17**	-.05	-.05	.02	-.04		
8. Tie co-workers	1.60	.35	.13**	.05	-.08	.10	.02	-.05	.23**	
9. Graduations/professor	.77	.13	.13**	-.07	.19**	.02	-.10	-.03	.02	.01

n = 262.

† p < .10; * p < .05; ** p < .01

TABLE 2.3
Results of multilevel regression analysis for solidary behavior of Ph.D. students

	Hypothesis	(1)	(2)	(3)	(4)
FACULTY LEVEL (LEVEL 2)					
Number of graduations	+				.64 (.24) [†]
INDIVIDUAL LEVEL (LEVEL 1)					
Temporal embeddedness (0 = first and last year)	+		.24* (.09)	.23* (.09)	.20* (.09)
Tie supervisor	+			.07 (.05)	.08 (.05)
Tie co-workers	+			.07* (.03)	.07* (.03)
STATISTICAL CONTROLS					
Gender (1 = female)		-.13 (.08)	-.11 (.08)	-.11 (.08)	-.10 (.08)
Age		-.02* (.01)	-.02* (.01)	-.02* (.01)	-.01* (.01)
Number of hours per week		.01 (.01)	.01 (.01)	.01 (.01)	.01 (.01)
Commitment		.01 (.15)	-.02 (.15)	-.03 (.15)	-.04 (.14)
Year started			.01 (.01)	.01 (.01)	.00 (.00)
Constant		3.11* (.49)	2.67* (.52)	2.21* (.54)	1.99* (.57)
-2*loglikelihood		494.77 [†]	488.72*	481.59*	472.02*
Deviance		14.00	6.05	7.13	6.57
Df		4	2	2	3

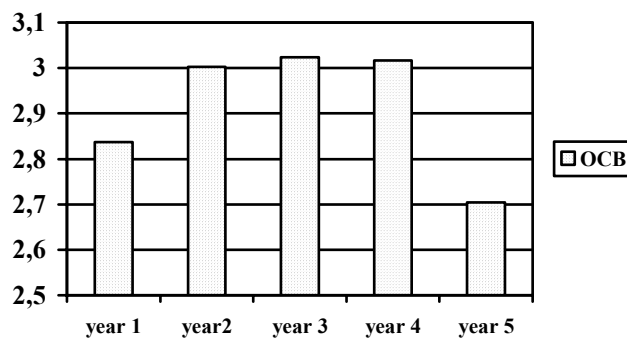
n = 262. Unstandardized regression coefficients are reported; standard errors are in parentheses.

Empty model: -2*loglikelihood = 508.77; constant = 2.96 (.04)*

[†] p < .10; * p < .05; ** p < .01

Temporal embeddedness is significantly related to solidarity from Ph.D. students ($b = 20; p < .05$), even when the effects of networks and the individual characteristics (age, gender, tenure, working hours, and organizational commitment) are taken into account. The curvilinear relation between year group and solidarity is graphically represented in Figure 2.1.

FIGURE 2.1
Relation between year groups and OCB



The model fit improves significantly if we add the network variables. We find that informal network embeddedness, in the sense of good relations with co-workers, is important for solidarity. Ph.D. students with good relations with other Ph.D. students also exhibit higher levels of OCB. The same does not apply to relations with supervisors. The results show that network embeddedness has a strong effect on the solidarity of Ph.D. students toward their departments. Ph.D. students in research-oriented departments demonstrate higher levels of OCB than their counterparts in education-oriented departments. In summary, empirical results confirm hypothesis 2.1, hypothesis 2.2, and hypothesis 2.3a. Hypothesis 2.3b is not confirmed. Table 2.4 shows these results.

TABLE 2.4
Overview of hypotheses and results

	Hypothesis	Result
Temporal embeddedness	+	Supported
Formal network embeddedness	+	Supported
Informal tie with supervisor	+	Not supported
Informal tie with co-workers	+	Supported

2.5 DISCUSSION AND CONCLUSIONS

2.5.1 THEORETICAL AND PRACTICAL IMPLICATIONS

Employers are assumed to demand more solidarity from their employees than ever before. Employee solidarity has many different facets, one of which is reflected by Organizational Citizenship Behavior (OCB). OCB refers to employee behavior that is not part of the formal job description and that benefits the organization. This kind of behavior develops and is sustained if certain conditions are met. In this chapter, we hypothesize the effects of embeddedness on solidarity. We argue that temporal embeddedness (the degree to which people share a mutual past and future) and network embeddedness (the degree to which people have relations with each other) increase solidarity.

We examine the effects of the conditions on the behavior of Ph.D. students, a special group of temporary workers at Dutch universities. The hypothesis concerning temporal embeddedness asserts a curvilinear relation between temporary contracts and OCB. The analyses show that Ph.D. students demonstrate less OCB in the first and last years of their projects than in the intervening years. This result confirms the notion that solidarity needs time to grow. As a result, first-year Ph.D. students are less willing to exhibit OCB. We also note a decline in OCB at the end of the contract. This result is consistent with the expectation that solidarity is affected by considerations pertaining to future interactions. Considering the effects of temporal embeddedness, we conclude that a good understanding of the effects of temporary contracts requires that the effects of the past and future be taken into account.

An alternative explanation for these results could be that the development of OCB depends on the work the Ph.D. students have to do during their projects. First-year Ph.D. students are not asked to take on extra assignments because they need to start up their projects. Similarly, last-year Ph.D. students are left alone because they need to finish their projects. As a result, Ph.D. students in the intervening years are more likely to be asked to demonstrate behavior consistent with OCB. This line of reasoning, however, does not take into account that Ph.D. students also have heavy workloads in connection with data gathering and analysis. We therefore interpret the focus of last-year Ph.D. students on completing their degrees as resulting from a shadow of the future. Instead of choosing to act in the general interest (by demonstrating OCB), the Ph.D. students choose to act in their own interests, devoting all their energy to writing a thesis. Assuming that the workload for Ph.D. students is constant throughout their projects, this latter finding confirms the

proposed effect of temporal embeddedness. Last-year Ph.D. students consider their own work more important than the functioning of the organization as a whole.

In addition to the influence of temporal embeddedness, we hypothesize that network embeddedness affects solidarity. We distinguish between formal and informal network embeddedness. According to the formal network hypothesis, employee solidarity is higher if there is more congruence between organizational policy and individual tasks. Applied to the situation of Ph.D. students, we assert that solidarity is higher at research-oriented departments than at departments focused on education. The analysis confirms this hypothesis: Ph.D. students at research-oriented environments exhibit greater solidarity toward their departments.

We formulate two hypotheses on informal network embeddedness. We assert that the solidarity of temporary employees is affected by the quality of their relations with their co-workers and supervisors. The analyses partly confirm these hypotheses. Good relations with co-workers have a positive effect on OCB of Ph.D. students. However, we do not find the same effect for relationships with supervisors. It is possible to argue that supervisors are more appreciative of Ph.D. students who work hard on their own projects and devote less attention to the general organization issues. In that case, however, OCB would be negatively linked to the quality of the relations with the supervisor. Our analysis does not show any evidence of this type of effect. We therefore conclude that OCB on the part of Ph.D. students is more strongly influenced by their relations with co-workers and less by their relations with their supervisors.

Contrary to earlier research findings (Organ & Ryan, 1995; Schappe, 1999), we do not observe a strong relation between OCB and organizational commitment. People's behavior is generally assumed to be largely influenced by their attitudes. Organizational commitment – in this study measured as affective attachment to the organization – reflects a positive job attitude toward the organization. Therefore, high commitment is likely to result in more OCB. However, the data do not show this relation. We explain this by referring to the special employment relations Ph.D. students have with the organization and the kind of commitment they are asked to report on. They are asked whether they feel a sense of belonging at the department. It is their own decision to only be part of a department for a short period without really belonging there. For this group of temporary workers, commitment in the sense of belonging to the organization does not affect OCB.

These findings have implications for OCB and labor flexibility research. So far, OCB studies have mainly focused on factors that determine OCB behavior (Podsakoff et al., 2000). By studying OCB from an embeddedness perspective, we hope to discover why these factors are important. Future research will focus on how

social embeddedness influences OCB in particular and solidarity in general. The theoretical ideas proposed in this chapter can be elaborated in several ways. It is wise to study the effects of different forms of flexible employment relationships on solidarity. One interesting question might concern differences between internal and external flexibility. Little is known about the effects of flexible labor on solidarity within organizations. Flexibility of labor affects the embeddedness of employers and employees and influences their behavior. This study shows that OCB among employees depends on the length of time they spend in the organization and the quality of the relations they have at work. However, the group studied here – Ph.D. students – is part of the organization for quite a long period. It is likely that the effects will be even stronger in the case of short-term employment contracts.

2.5.2 LIMITATIONS AND SUGGESTION FOR FUTURE RESEARCH

We would like to conclude this chapter with some suggestions for future research. Our focus on a special group of temporary workers has enabled us to study in detail how their behavior develops during the course of their contracts. It would be of interest to study different types of temporary workers and draw stronger conclusions about the effects of short-term contracts. The focus of this chapter was on external flexibility, and studying different forms of flexibility would enhance our knowledge on the effects of flexibility. We studied a particular form of solidarity – OCB, the behavior of employees towards their organization – but future research should contrast and compare it with other forms of solidarity to gain more insight about the effects of flexibility of labor on social embeddedness and solidarity.

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3

ORGANIZATIONAL CITIZENS OR RECIPROCAL RELATIONSHIPS? An Empirical Comparison^{3.1}

3.1 INTRODUCTION

For more than 65 years, managers and organizational researchers have been interested in cooperative types of behavior of employees. Writing in 1938, Barnard characterized effective organizations as systems in which individuals cooperate to reach organizational ends. Cooperative types of behavior and attitudes have been conceptualized under different headings, such as ‘willingness to cooperate’ (Barnard, 1938), ‘organizational loyalty’ (Hirschman, 1970; Hage, 1980), ‘organizational commitment’ (Mowday, Steers, & Porter, 1982), and ‘extra-role behaviors’, (Van Dyne, Cummings, & McLean Parks, 1995), such as ‘organizational citizenship behavior’ (Organ, 1988), ‘contextual performance’ (Borman & Motowidlo, 1993), and ‘prosocial organizational behavior’ (Brief & Motowidlo, 1986).

Organizational Citizenship Behavior (OCB: Organ, 1988) is the most frequently studied form of cooperative behavior. It consists of employee behavior that has an overall positive effect on the functioning of the organization, but cannot be enforced by the employment contract. Although researchers’ interest in this type of behavior has grown over the years, there are ongoing debates regarding the content, causes and possible effects of OCB (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). OCB research focuses mainly on cooperative behavior as an

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individual characteristic of the employee, and tries to explain why some employees behave more cooperatively than others. Therefore, it neglects the reciprocal nature of cooperative behavior. In this chapter we argue that the nature of cooperative behavior is that it involves at least two persons, is directed to specific others, and is affected by the behaviors of others. This means that cooperative behavior should not be examined as an individual characteristic of employees, but as a characteristic of the interpersonal relationship including the behavior of others. In this chapter, we introduce the concept of Organizational Solidarity (OS) that focuses on cooperative behavior in interpersonal relationships within organizations. We argue that employee behavior is influenced by the behavior of supervisors and co-workers. Since these relationships qualitatively differ from each other, we should make a distinction between them (Smith, Carroll, & Ashford, 1995). Therefore, we study the relationships employees have with their supervisors (vertical) and their co-workers (horizontal).

The first aim of this chapter is to examine if the idea of distinguishing between behavior in horizontal and vertical relationships makes sense. We develop OS based on an existing theory of solidarity. The second aim of this chapter is the empirical comparison between OS and two existing dimensions of OCB, with special attention to the effect of behavior of others. The research question of this chapter therefore reads: *Can the different dimensions of OS be distinguished from each other and is reciprocity of cooperative behavior an important mechanism in explaining OS?*

The chapter is structured as follows. It starts with an overview of issues in OCB research (section 3.2). In section 3.3 a theory of workplace solidarity is introduced and hypotheses are formulated. The research data are described in section 3.4. The method of analysis and results are presented in section 3.5 and in section 3.6 these results are discussed.

3.2 ISSUES IN OCB RESEARCH

OCB research was originated in the early eighties (Bateman & Organ, 1983; Smith, Organ, & Near (1983). In a recent review of this field, OCB was defined as:

“Individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in aggregate promotes the effective functioning of the organization. By discretionary, we mean that the behavior is not an enforceable requirement of the role or job description, that is, the clearly specifiable terms of the person’s employment contract with the organization; the behavior is rather a matter of personal choice, such that the omission is not generally understood as punishable”
(Organ, 1988: 4).

In the twenty years following, the amount of research on OCB increased tremendously (for a review and a sketch of the historical development of this research, see Podsakoff et al., 2000). Although OCB has proven itself a fruitful concept for research, the same issues emerged in different studies (LePine, Erez, & Johnson, 2002; Motowidlo, 2000). The first problem concerns what kinds of behavior should be classified as OCB. For instance, many articles pose the question whether it is possible to distinguish in-role from extra-role behavior: does OCB consist of types of behavior that are beyond the job description or does it also include contractually required behavior? Moreover, the dimensionality of the OCB construct is a recurring problem in the literature. Here, the question is how many dimensions of OCB should and can be distinguished and under what headings they should be placed. A third and final problem is the lack of a clear theoretical approach to OCB in the literature. These issues are discussed in more detail in the following subsections.

3.2.1 OCB: IN-ROLE VERSUS EXTRA-ROLE BEHAVIOR?

Employee performance is a combination of in-role and extra-role behavior (Williams & Anderson, 1991). The distinction between in-role and extra-role behavior is meant to draw a line between the types of behavior that an employee is expected to show according to the formal employment contract (in-role behavior) and the types of behavior that go beyond the formal contract (extra-role behavior). Following the definition of Organ (1988), which states that OCB consists of positive types of behavior that are not part of the formal job description, OCB should be limited to extra-role behavior. However, research shows that the distinction between in-role and extra-role is not as clear as it may seem at first. For example, Pond, Nacoste, Mohr, and Rodriguez (1997) show that supervisors in fact formally evaluate some types of behavior that are considered extra-role in the literature. This finding is not consistent with the frequently made assumption that extra-role behavior is not rewarded. In some instances, extra-role behavior is part of the formal role description and rewarded accordingly. What is more, employees tend to engage more in extra-role behavior if they are rewarded for doing so (Pond et al., 1997). Besides that, there is the problem that researchers put themselves in a difficult position of making this distinction, while it “varies across persons, jobs, organizations and over time and with circumstances for individual job incumbents” (Van Dyne, Graham, & Dienesch, 1994: 766).

In contrast to the original statement of Organ (1988) that in-role behavior and OCB are distinct from one another, it has been claimed that OCB includes both extra- and in-role behaviors (Graham, 1991; Van Dyne et al., 1994). The second

approach overcomes this problem by not distinguishing in-role from extra-role behavior, but classifying all positive and organizationally relevant types of behavior shown by employees as OCB (Van Dyne et al., 1994). Instead of making an effort of distinguishing between in-role and extra-role behavior, this approach is more aimed at identifying employee behavior that positively contributes to the organization. Since there are considerable difficulties with clearly distinguishing in-role from extra-role behavior, we regard this second approach as a promising solution.

3.2.2 DIMENSIONALITY OF OCB

When OCB was introduced by Smith, Organ and Near (1983) and Bateman and Organ (1983) a distinction was made between two dimensions of employee behavior: general compliance (doing what a good employee should do) and altruism (helping specific others). After its introduction, the content of the concept underwent a number of transformations. In his review of the research field in 1988, Organ states that OCB has five distinct dimensions (Organ, 1988): (1) altruism (helping specific others); (2) civic virtue (keeping up with important matters within the organization); (3) conscientiousness (norm compliance); (4) courtesy (consulting others before taking action); and (5) sportsmanship; (not complaining about trivial matters). The last couple of years there has been a shift in the dimensions again. According to Organ (1997), OCB consists of three dimensions: helping, courtesy, and conscientiousness. Other OCB researchers have also struggled with defining its dimensions. This has resulted in a proliferation of OCB dimensions, causing difficulty in finding the exact items comprising the different dimensions of OCB (Podsakoff et al., 2000).

A different view on the dimensionality of OCB comes from Williams and Anderson (1991). They divide OCB in two types (Van Dyne, Cummings, & Parks, 1995; Williams & Anderson, 1991). The first form they distinguish consists of behavior directed at specific individuals in the organization, such as courtesy and altruism (OCB-I), while the second refers to behavior that is concerned with benefiting the organization as a whole, such as conscientiousness, sportsmanship and civic virtue (OCB-O). Although these dimensions that are more specific and may be a fruitful way of elaborating OCB research, these two dimensions of OCB could not be clearly distinguished from each other empirically. This may be in line with the conclusion that OCB may refer to a general tendency to be cooperative within an organizational setting (LePine et al., 2002). In our view, however, the problem is that it is not fully recognized that these types of behavior depend on the behavior of specific others.

3.2.3 OCB: A CONCEPT IN SEARCH OF A THEORY?

Besides the issues surrounding its conceptualization, the theoretical underpinnings of OCB have also been debated in literature (Van Dyne et al., 1994). The conceptual confusion, some parts of which have been highlighted, is in our opinion due to the fact that there is no such thing as ‘the theory of OCB’. The items measuring OCB have been selected on an empirical rather than a theoretical basis, which places OCB in the category of a first-degree construct. Whereas first-degree constructs do not have precise definitions, second-degree constructs are carefully defined and can be conceptually and theoretically differentiated from other constructs (Van Dyne et al., 1995). Although OCB can be considered a second-degree construct because it is defined, it was not defined at the onset. Moreover, the different dimensions of OCB lack specific definitions. Since the development of the OCB dimensions is not based on theoretical considerations, it is hard to decide what items should be measured. In addition to the question whether OCB is a second-degree or a first-degree construct, a more important issue is what factors are found to influence OCB.

Organ (1990) proposed that an employee's individual disposition would provide the most valuable explanation of OCB, which agreed upon by many OCB researchers (Schnake & Dumler, 2003). Considering that individual dispositions are not the only predictors of (cooperative) behavior and that social context and interpersonal relations are assumed to play an important role (e.g., Granovetter, 1985), this may be a fruitful way to examine cooperative behavior.

3.3 ORGANIZATIONAL SOLIDARITY (OS)

In this section we argue that some of the problems related to OCB research can be dealt with using a relational approach to cooperative behavior within organizations. Organizational Solidarity (OS) explicitly defines cooperative behavior as involving at least two people, a point that has not been fully developed in OCB literature. Instead of being an individual choice – an implicit assumption in OCB research – cooperative behavior can be seen as interpersonal behavior, which is affected by the behavior of others. Therefore, it is also necessary to make clear at whom the behavior is directed. To distinguish this form of cooperative behavior from OCB, we use the term Organizational Solidarity.

Solidarity refers to individual contributions to the common good (Hechter, 1987; Lindenberg, 1998). Such contributions may create a tension between individual and collective interests because for individuals cooperation is more costly than non-cooperation while at the same time everyone would be better off if everyone else cooperates (Miller, 1992; Murnighan, 1994; Aquino, 1998). As a

result, cooperation does not come about easily in short-term relationships, but needs additional mechanisms to be sustained^{3,2}.

Solidarity involves at least two persons who can choose to cooperate or not. Social interaction within these relationships is regarded as fundamental to the development of OS. Social exchange theorists (Blau, 1964; Homans, 1961) regard cooperation in social relationships to be based on the norm of reciprocity (Gouldner, 1960), which means that cooperative behavior of one actor will be responded to by a cooperative move of the other actor. It follows that employees will reciprocate solidarity received from both their co-workers and their supervisors. Some recent attempts that suggest linking OCB to social exchange theory (Podsakoff et al., 2000) take a step in that direction since social exchange theory explicitly models the exchange between two actors (Blau, 1964; Homans, 1961). The investment approach to employment relations (Tsui, Pearce, Porter, & Tripoli, 1997) shows that employees engage more in OCB if organizations invest in them. Although the logic behind this reasoning is convincing, some more detail can be added to this general exchange framework. In addition, the exchange between organizations and employees is clear, but it is harder to use the same exchange framework to understand effects for co-worker behavior. For instance, it does not provide the logic to understand why co-workers would be willing to show altruism toward each other. The same holds for leader-member exchange theory (Dienesch & Liden, 1986). These theories focus on the effects of the vertical relationship between supervisors and subordinates, but do not include the horizontal relationship between employees.

This chapter focuses on both horizontal and vertical relationships. Employees will be solidary towards their co-workers when their co-workers act solidary towards them. Similarly, employees will be solidary towards their supervisor if their supervisor is solidary towards them. We argue that these two kinds of behavior differ since they depend on the behavior of different others (Cole, Schaninger, & Harris, 2002). Besides the introduction of OS as a form of behavior, we are interested in comparing it to existing OCB dimensions. In order to do so, we return to the two basic OCB dimensions *Generalized Compliance* and *Altruism*. *Generalized Compliance* refers to behaviors that a good employee has to show according to the organization. This of course captures several types of behavior of which *Solidarity toward the Supervisor* maybe one. *Altruism* has to do with behavior

^{3,2} According to Murnighan (1994), cooperation depends on similarity in partners' values, the perceived status and legitimacy of partners, the extent of their prior social ties (the reliability and predictability of the others), and the social context. These determinants show that the characteristics of others should be taken into account when trying to understand this type of behavior.

toward co-workers, such as helping someone out. This kind of behavior comes closest to *Solidarity toward Co-workers*. Based on these theoretical considerations we formulate two hypotheses:

Vertical Reciprocity Hypothesis (Hypothesis 3.1):

Perceived solidarity from supervisor positively affects solidarity toward supervisor (hypothesis 3.1a), and generalized compliance (hypothesis 3.1b).

Horizontal Reciprocity Hypothesis (Hypothesis 3.2):

Perceived solidarity from co-workers positively affects solidarity toward co-workers (hypothesis 3.2a), and altruism (hypothesis 3.2b).

3.4 DATA

3.4.1 RESPONDENTS

Respondents are recruited from nine different organizations. The dataset includes employees from a ministerial organization, a military organization, a newspaper publishing organization, an engineering organization, a foundation for cultural activities, a consultancy firm, a recreation center, and a municipality. The dataset consists of 674 employees. Table 3.1 provides an overview of the background characteristics of the organizations.

TABLE 3.1
Descriptive statistics of the organizations

	Number of respondents	Percentage women	Mean educational level
Ministry	266	33.1	6.1
Military organization	199	12.1	5.2
Supportive staff university	11	0.0	5.6
Engineering	17	5.9	4.7
Art foundation	17	64.7	6.4
Consultancy firm	15	53.3	6.9
Housing foundation	14	35.7	4.9
Recreation center	15	73.3	4.6
Municipality	120	39.2	5.0
Total	674	29	5.6

In the newspaper publishing organization, all responding employees are men. This is a considerable difference with 73 percent female respondents of the swimming pool. The educational level of employees is measured on a scale from 1 (no education completed) to 9 (Ph.D. level completed). The employees working at the recreation center have the lowest educational level. The consultancy firm employs the highest educated employees.

3.4.2 PROCEDURE

Questionnaires were developed to gather data among employees (for the complete questionnaire see Lambooij, Sanders, Koster, Emmerik, Raub, Flache, & Wittek, 2003). In each of the organizations a student was present during that period to collect the data. The aim of this data collection procedure was to increase the response rate. Because the questionnaire was modified to fit the specific needs of the organization this was expected to be the case. Modification of the questionnaire was done by adding questions about topics that were of special interest to the organization. The items measuring the variables used in this chapter were asked in the same fashion across the different organizations. Another advantage was that the students could respond to employees' questions and complaints regarding the questionnaire or the research in general. Because of this procedure, respondents were more informed about the aim of the research and were more willing to participate. The overall response rate of the organizations in the sample is 45%.

3.4.3 MEASURES

All the items of the scales that are used in this study were measured with a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree) and were indicated by the employee. An overview of the items measuring OCB, and OS, is provided in Appendix B.

DEPENDENT AND INDEPENDENT VARIABLES

To measure *Organizational Solidarity*, we apply the general definition of Lindenberg (1998), according to which solidarity consists of cooperative behavior of an individual in five social dilemma situations with an Ego and an Alter, terms that refer to the self and the other (Sanders, Schyns, Koster, & Rotteveel, 2003; Sanders, 2004; Sanders & Schyns, 2005). The five social dilemmas are translated into organizational situations (Sanders, Van Emmerik, & Raub, 2002) and are applied to two fundamentally different dyadic relationships within organizations: horizontal, among employees at the same hierarchical level, and vertical, between supervisors and subordinates (Smith et al., 1995). As a result, four measures of solidarity could

be created, including the behavior of Alter and Ego. Since employees provide the answers, we do not directly measure the actual behavior of supervisors and co-workers but an indication of the way the employee perceived their behavior. There are four variables measuring OS. These are vertical solidarity, consisting of solidarity toward the supervisor (*Solidarity toward Supervisor*) and perceived solidarity from the supervisor (*Solidarity from Supervisor*); and horizontal solidarity consisting of solidarity toward co-workers (*Solidarity toward Co-workers*) and perceived solidarity from co-workers (*Solidarity from Co-workers*). The employee questionnaire contains items measuring OCB and OS. The **Organizational Citizenship Behavior** items were drawn from MacKenzie, Podsakoff, and Fetter (1991). Two dimensions of OCB usually studied in OCB research (Wayne & Cordeiro, 2003) were examined: *Generalized Compliance* and *Altruism*. *Generalized Compliance* refers to what a good employee ought to do, such as attendance and punctuality. *Altruism* on the other hand, means helping others such as providing support and orienting new co-workers. An item measuring *Generalized Compliance* is: "I fulfill the obligations as stated in my job description", an item measuring *Altruism* is: "I will help someone who is very busy".

STATISTICAL CONTROL VARIABLES

Task interdependence is the extent to which members rely on each other to complete their jobs. It for instance results in team members sharing materials, information, and advice (Cummings, 1978; Susman, 1976; Van de Ven, Delbeq, & Koenig, 1976) and is likely to affect vertical and horizontal relationships. The scale for task interdependence consists of three items based on earlier measures (Van der Vegt, Emans, & Van de Vliert, 1998) (Cronbach's Alpha = .81). An example of an item measuring task interdependence is: "I depend on my co-workers in order to be able to do my work well". Gender is coded 0 (male) and 1 (female). **Educational level** was measured by asking the highest level of education that the respondent completed. This variable is measured on a scale from 1 (no education completed) to 9 (Ph.D. level completed). Since it is possible to compare educational level across organizations and related to discretion in jobs, no other job-related variables were included. To check the stability of the results, **organizational dummies** are added to the regression analysis. They are reported only if they influence the relationship between the main variables.

3.5 DATA ANALYSIS

3.5.1 MULTIPLE GROUP METHOD

In order to test the prediction put forward in this chapter, we use several methods. First, the scales are constructed using the Multiple Group Method (MGM). After this, OLS regression analyses are conducted to test the hypotheses. Factor analysis is commonly used to investigate whether or not individual items belong to a scale (Kim & Mueller, 1978) and the usual procedure is to employ factor analysis to explore whether items can be scaled into different factors or dimensions. However, if there are theoretical reasons to classify items under a particular factor, it is possible to perform a confirmatory factor analysis (Jöreskog, 1969). The LISREL program especially (Jöreskog & Sörböm, 1996) is widely used to this end. An alternative technique is the Multiple Group Method (MGM) (Guttman 1952; Nunnally, 1978). MGM is less often applied than LISREL, despite the fact that the results generated are easier to interpret and often more accurate (Hendriks & Kiers, 1999; Tuerlinckx, Ten Berge, & Kiers, 1996).

In MGM the items are assigned to theoretically expected subscales. Adding up the different items that are expected to belong to the scale creates the subscales. The next step is to correlate each of the items with all subscales (excluding that particular item from the scale). If each item has the highest correlation with the subscale to which it is assigned the proposed structure of the scales fits the data. An item is not rightly assigned to a subscale if it scores higher on another subscale than on the one to which it was assigned. In this case, the item should be reassigned to the new subscale.

We use the MGM procedure to test the proposed factor structure. If horizontal solidarity differs from vertical solidarity, and if the behavior of the employee differs from the behavior of supervisor and co-workers, then we should find four different subscales: *Solidarity toward Supervisor*, *Solidarity from Supervisor*, *Solidarity toward Co-workers*, and *Solidarity from Co-workers*. The items intended to measure these different types of behavior are assigned to four different subscales. We also investigate whether or not horizontal and vertical solidarity differs from OCB. Items are assigned to two OCB factors often used in research: *Generalized Compliance* and *Altruism*. Correlation coefficients are computed for all the items with all the scales. When an item correlates with the subscale to which it self is assigned, the problem of self-correlation arises. Therefore, items do not correlate with the whole subscale, but rather with the other items in that particular subscale.

3.5.2 SCALE CONSTRUCTION

Tables 3.2a-3.2f show the results of the MGM analysis, presenting the correlation coefficients between the individual items and the subscales. In the tables, the scales are in the rows and the individual items are in the columns. The first four tables (3.2a-3.2d) show that the OS items are strongly related to the subscales to which they were assigned. In Table 3.2a, there is only 1 item that does not fit the expected scale. The item “I apologize when I have made a mistake regarding my supervisor” scores higher on the *Solidarity toward Co-workers* scale than the *Solidarity toward Supervisor* scale. Therefore, we excluded this item from the scale and did not include it in any other scale. All other OS items score high on the scale to which they are assigned. The correlation coefficients range from .53 to .82. Examining the pattern in Table 3.2, it turns out that the OS scales are measuring four different forms of behavior: from the employee to the supervisor, from the supervisor to the employee, from the employee to the co-workers, and from the co-workers to the employee. The last two tables (3.2e and 3.2f) provide the results for the OCB scales *Generalized Compliance* and *Altruism*. The MGM analysis shows that the three *Generalized Compliance* items indeed form one scale and that the two *Altruism* items form another one.

In addition to the MGM analyses, reliability analyses were conducted. All four OS scales proved to be quite reliable. The Cronbach’s Alphas for the scales are: *Solidarity toward Supervisor* (.78), *Solidarity from Supervisor* (.89), *Solidarity toward Co-workers* (.85), and *Solidarity from Co-workers* (.92). The reliabilities for the OCB scales are: *Generalized Compliance* (.70), and *Altruism* (.70).

TABLE 3.2
Results of multiple group method analysis

3.2a: Solidarity toward Supervisor					
	(1)	(2)	(3)	(4)	(5)
Solidarity toward supervisor	.53	.59	.51	.57	.56
Solidarity from supervisor	.36	.46	.23	.37	.26
Solidarity toward co-workers	.28	.43	.62	.36	.52
Solidarity from co-workers	.23	.33	.28	.18	.27
Generalized compliance	.28	.31	.35	.31	.34
Altruism	.21	.20	.36	.22	.45

3.2b: Solidarity from Supervisor					
	(1)	(2)	(3)	(4)	(5)
Solidarity toward supervisor	.41	.43	.40	.25	.25
Solidarity from supervisor	.64	.68	.66	.73	.68
Solidarity toward co-workers	.16	.20	.33	.24	.28
Solidarity from co-workers	.22	.22	.31	.29	.32
Generalized compliance	.09	.12	.10	.09	.09
Altruism	.03	.14	.20	.13	.15

3.2c: Solidarity toward Co-workers					
	(1)	(2)	(3)	(4)	(5)
Solidarity toward supervisor	.49	.53	.53	.50	.48
Solidarity from supervisor	.27	.31	.24	.33	.20
Solidarity toward co-workers	.69	.72	.66	.66	.59
Solidarity from co-workers	.42	.51	.39	.45	.31
Generalized compliance	.48	.49	.33	.40	.38
Altruism	.30	.38	.31	.27	.47

TABLE 3.2 (continued)
Results of multiple group method analysis

3.2d: Solidarity from Co-workers

	(1)	(2)	(3)	(4)	(5)
Solidarity toward supervisor	.29	.28	.30	.28	.23
Solidarity from supervisor	.30	.34	.35	.37	.35
Solidarity toward co-workers	.47	.48	.50	.46	.40
Solidarity from co-workers	.80	.82	.78	.79	.78
Generalized compliance	.26	.23	.17	.22	.15
Altruism	.19	.18	.15	.12	.16

3.2e: Generalized Compliance

	(1)	(2)	(3)
Solidarity toward supervisor	.27	.38	.27
Solidarity from supervisor	.10	.15	.13
Solidarity toward co-workers	.36	.38	.29
Solidarity from co-workers	.16	.16	.11
Generalized compliance	.53	.58	.45
Altruism	.32	.37	.23

3.2f: Altruism

	(1)	(2)
Solidarity toward supervisor	.38	.43
Solidarity from supervisor	.13	.18
Solidarity toward co-workers	.41	.51
Solidarity from co-workers	.16	.26
Generalized compliance	.30	.39
Altruism	.54	.54

n = 674.

The scales are in the rows and the individual items in the columns. Correlation coefficients are reported (highest coefficients are in boldface). For an overview of the items, see Appendix B.

TABLE 3.3
Means, standard deviations, and correlations

	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.
1. Solidarity toward supervisor	5.67	.89	.78							
2. Solidarity from supervisor	5.06	1.36	.48**	.89						
3. Solidarity toward co-workers	5.95	7.09	.57**	.34**	.85					
4. Solidarity from co-workers	5.44	1.04	.29**	.39**	.53**	.92				
5. Generalized compliance	5.76	.80	.40**	.16**	.43**	.18**	.70			
6. Altruism	5.71	.86	.44**	.16**	.52**	.23**	.39	.70		
7. Task interdependence	5.23	1.25	.10**	.14**	.01	.12**	-.06	.08*	.81	
8. Gender (1 = female)	.29	.45	-.01	-.07	.09*	-.02	-.01	.08*	-.13**	
9. Educational level	5.55	1.32	.04	.02	-.19**	-.07 [†]	-.10**	-.10*	.18**	.02

n = 674. Cronbach's Alphas are on the diagonal.

[†] p < .10; * p < .05; ** p < .01

3.5.3 CORRELATIONS

The means, standard deviations, and correlation coefficients among the variables are shown in Table 3.3. Table 3.3 shows that the relationships between the OCB and OS scales are all positive and significant. *Solidarity toward Supervisor* is related to *Solidarity from Supervisor* ($r = .48, p < .01$) and *Solidarity toward Co-workers* is related to *Solidarity from Co-worker* ($r = .53, p < .01$). Furthermore, *Solidarity toward Supervisor* and *Generalized Compliance* are related ($r = .40, p < .01$), as well as *Solidarity toward Co-workers* and *Altruism* ($r = .52, p < .01$).

3.5.4 REGRESSION ANALYSIS

The hypotheses that we formulated are (1) *Solidarity toward Supervisor* is positively related to *Solidarity from Supervisor*, and (2) that *Solidarity toward Co-workers* is positively related to *Solidarity from Co-workers*. Furthermore, since *Solidarity toward Supervisor* and *Generalized Compliance* refer to vertical relations and *Solidarity toward Co-workers* and *Altruism* both are horizontally directed, we tested whether these two OCB dimension are also affected by *Solidarity from Supervisor* and *Solidarity from Co-workers* respectively. We tested these hypotheses with OLS regression analysis. We study the hypotheses in three steps. The first step examines the effects of perception of *Solidarity from Supervisor* and *Solidarity from Co-workers* (model 1). The second model adds for task interdependence, gender and educational level (model 2). The third model also includes the dummy variables for the organizations. Including the dummies did not affect the third model significantly; therefore, they were not reported in the tables (model 3). The results of the regression analyses are shown in Tables 3.4, 3.5, 3.6, and 3.7.

TABLE 3.4
Results of regression analysis for solidarity toward supervisor

	Hypothesis	(1)	(2)	(3)
Solidarity from supervisor	+	.44** (11.98)	.44** (11.86)	.42** (11.08)
Solidarity from co-workers		.13** (3.52)	.13** (3.56)	.14** (3.81)
STATISTICAL CONTROLS				
Gender (1 = female)			.02 (.66)	.05 (1.29)
Task interdependence			.01 (.40)	-.01 (.33)
Educational level			.04 (1.20)	.00 (.10)
Adjusted R ²		.26	.25	.28
F statistics		110.11**	44.45**	19.70**

n = 674. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

The third model also includes the organization dummies (not shown).

† p < .10; * p < .05; ** p < .01

TABLE 3.5
Results of regression analysis for solidarity toward co-workers

	Hypothesis	(1)	(2)	(3)
Solidarity from supervisor		.17** (4.77)	.19** (5.37)	.17** (4.92)
Solidarity from co-workers	+	.47** (13.01)	.45** (12.92)	.46** (12.85)
STATISTICAL CONTROLS				
Gender (1 = female)			.12** (3.70)	.13** (3.89)
Task interdependence			-.03 (.86)	-.04 (1.14)
Educational level			-.16** (4.88)	-.17** (4.82)
Adjusted R ²		.30	.34	.35
F statistics		140.3**	67.57**	27.30**

n = 674. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

The third model also includes the organization dummies (not shown).

† p < .10; * p < .05; ** p < .01

TABLE 3.6
Results of regression analysis for generalized compliance

	Hypothesis	(1)	(2)	(3)
Solidarity from supervisor	+	.10* (2.47)	.12** (2.74)	.11* (2.44)
Solidarity from co-workers		.14** (3.37)	.14** (3.35)	.15** (3.40)
STATISTICAL CONTROLS				
Gender (1 = female)			.01 (.17)	.01 (.30)
Task interdependence			-.08 [†] (1.90)	-.09* (2.13)
Educational level			-.08* (2.09)	-.09* (1.99)
Adjusted R ²		.04	.06	.07
F statistics		13.97**	7.68**	3.71**

n = 674. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

The third model also includes the organization dummies (not shown).

[†] p < .10; * p < .05; ** p < .01

TABLE 3.7
Results of regression analysis for altruism

	Hypothesis	(1)	(2)	(3)
Solidarity from supervisor		.08 [†] (1.90)	.08* (1.20)	.07 (1.58)
Solidarity from co-workers	+	.22** (5.19)	.20** (4.80)	.22** (5.11)
STATISTICAL CONTROLS				
Gender (1 = female)			.09* (2.34)	.08 [†] (1.86)
Task interdependence			.07 [†] (1.81)	.06 (1.56)
Educational level			-.11** (2.77)	-.14** (3.41)
Adjusted R ²		.06	.08	.09
F statistics		22.22**	11.73**	5.50**

n = 674. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

The third model also includes the organization dummies (not shown).

[†] p < .10; * p < .05; ** p < .01

Table 3.4 shows that perceived *Solidarity from Supervisor* is the most important predictor of *Solidarity toward Supervisor* ($b = .44$), also *Solidarity from Co-workers* is a predictor as well, but is less important ($b = .13$). Other variables in the regression model do not have an effect on *Solidarity toward Supervisor*. Table 3.5 shows that *Solidarity toward Co-workers* is most strongly influenced by *Solidarity from Co-workers* ($b = .46$) and to a lesser extent by *Solidarity from Supervisor* ($b = .17$). The final model also shows that women tend to show more *Solidarity toward Co-workers* and higher educated employees show less *Solidarity toward Co-workers*. Table 3.6 investigates *Generalized Compliance*. In the first model, *Generalized Compliance* is positively related to *Solidarity from Supervisor* ($b = .11$) and *Solidarity from Co-workers* ($b = .15$), but compared to predictors of *Solidarity toward Supervisor* and *Solidarity toward Co-workers* they are lower. Higher educated employees show less *Generalized Compliance* than lower educated employees. Table 3.7 shows that *Altruism* of employees is positively influenced by *Solidarity from Co-workers*. Women show more *Altruism* and there is a negative relation between educational level and *Altruism* of employees. Comparing the explained variance of the models shows that the models including OS have higher explanatory power than the ones including OCB.

3.6 SUMMARY OF THE FINDINGS

These findings provide strong support for hypothesis 3.1a regarding *Solidarity toward Supervisor*. In the model, the main predictor of this type of behaviors turned out to be *Solidarity from Supervisor*. In addition, we find strong support for hypothesis 3.2a, stating that *Solidarity toward Co-workers* is positively influenced by *Solidarity from Co-workers*. This means that the results show that reciprocity indeed functions as an exchange mechanism in the relationship between employees and supervisors and in the relationship between employees and co-workers. The results for the OCB dimensions are less straightforward. Hypothesis 3.1b concerning *Generalized Compliance* received support, but, *Solidarity from Co-workers* had a stronger effect than *Solidarity from Supervisor*. Hypothesis 3.2b regarding *Altruism* was supported by the regression analysis, meaning that it is mainly influenced by *Solidarity from Co-workers*. Table 3.8 provides an overview of the findings in this study.

TABLE 3.8
Overview of hypotheses and results

	Hypothesis	Organizational Solidarity	OCB
Vertical reciprocity	+	Supported	Supported
Horizontal reciprocity	+	Supported	Supported

3.7 DISCUSSION AND CONCLUSIONS

3.7.1 THEORETICAL AND PRACTICAL IMPLICATIONS

In this chapter, we studied Organizational Solidarity (OS) as a specific form of Organizational Citizenship Behavior (OCB). In an attempt to overcome the problems associated with OCB, we introduced the concept of OS. The point we wish to make in this chapter is that two requirements must be met when attempting to understand cooperative behavior within organizations. The first is that cooperative behavior involves at least two parties. It is therefore necessary to look at the behavior of these parties towards one another. The second, following from the first, is that within organizations vertical forms of cooperation should be distinguished from horizontal. The review of OCB shows that it is difficult to measure the concept and come up with a theoretical explanation of why employees engage in this type of behavior. This may be because OCB measures do not meet the two requirements. By being more specific about who is cooperating with whom and why, some of the problems in OCB research might be resolved.

In this study we compare two existing OCB dimensions (*Generalized Compliance* and *Altruism*) to four forms of OS (*Solidarity toward Supervisor*, *Solidarity from Supervisor*, *Solidarity toward Co-workers*, and *Solidarity from Co-workers*). A Multiple Group Method analysis showed that the OCB and OS dimensions measure different forms of behavior. The forms of OS turned out to have a higher reliability than the OCB dimensions. We also investigated if there are similarities between OCB and OS. Based on their description in literature and the way they are measured we put forth the idea that *Generalized Compliance* might be related to *Solidarity toward Supervisor* and that *Altruism* will be related to *Solidarity toward Co-workers*. It is shown that *Solidarity from Supervisor* influences *Generalized Compliance* and that *Solidarity toward Co-workers* is related to *Altruism*.

The finding that the behavior of supervisors and co-workers is related to the OCB dimensions does have an implication for OCB research. In this chapter the

emphasis is on distinguishing four forms of solidarity that were expected to be related to each other in the employee – supervisor and employee – employee dyad. The argument behind this is that the person at whom the behavior is directed influences cooperative behavior. That the different dimensions of OCB are related to supervisor solidarity and co-worker solidarity also supports this claim. This finding shows that it is important to take the behavior of other actors in account. Research that approaches OCB from an exchange perspective can use supervisor solidarity and co-worker solidarity (or similar) measures to investigate what kind of exchanges are relevant to explain OCB. For instance, a researcher interested in explaining *Altruism* of employees could take the level of *Altruism* of other employees in the same team into account.

Our investigation of OS also contributes to theories about co-worker relations and employment relations. The finding that reciprocity explains cooperative behavior is similar to research in the fields of leader-member exchange (Dienesch & Liden, 1986), organizational support (Eisenberger, Huntington, Hutchinson, & Sowa, 1986), and organizational justice (Folger & Cropanzano, 1998). However, this kind of research focuses solely on exchanges in the vertical dimension of organizational relationships (Tekleab & Taylor, 2003). What the current study tries to show is that both the vertical and the horizontal dimension of relationships matter. Moreover, the kind of behavior that employees show toward their organization may not only result from the vertical relationships, but may also result from horizontal relationships (Bommer, Miles, & Grover, 2003). On the other hand, these horizontal relationships are likely to be influenced by the vertical relationships. Therefore, it may be useful for researchers examining vertical relationships to integrate the horizontal dimension in their models, and for researcher studying the horizontal dimension, to incorporate vertical relationships as well.

In this study we investigated the scalability of the different OS dimensions and how these relate to OCB dimension. Therefore, it is not possible to say anything about the outcomes of OS on different levels. It would be of theoretical and practical interest to systematically investigate what the organizational, team and individual level effects of OS are. For instance questions that need to be addressed in future research are if OS leads to more satisfied workers, less turnover, and higher organizational performance. Clearly, additional data and theory are needed to test if these kinds of effects occur and to explain these effects.

A practical implication of this study is that supervisors play a key role in eliciting cooperative behavior from their subordinates. They can do this directly because they can increase the cooperative behavior of the team members by showing cooperative behavior towards them. Since cooperation is reciprocal, it is expected

that a good move from the supervisor will be answered by a cooperative move from the subordinates. What is more, supervisors can also play a role in creating solidarity relationships among team members. Although it is more indirect than with vertical relationships, it is possible that supervisors monitor the horizontal relationships within a team and intervene whenever it is clear that solidarity between particular members is declining, for instance by changing the design of the tasks in the team.

3.7.2 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This chapter can be improved upon in several ways. First, we still need to explore whether or not the five social dilemmas described in solidarity theory are the most relevant to organizational settings. Future research should investigate if the five social dilemma situations are indeed the most important ones. In addition, research should aim at further studying the relationship between the different forms of behavior that comprise solidarity. This line of research should focus on the question of what meaning people give to solidarity themselves. Also the question needs to be answered if it holds that solidarity means that people should be showing cooperative behavior in all five situations or that variations are possible. In other words, the concept of OS is plausible on theoretical grounds but it is necessary to investigate the empirical content in more detail. This was one of the goals of this chapter; however, more work needs to be done in that direction. A second point that needs to be investigated further has to do with the data we used: these data were gathered through self-reports from employees. So, employees had to answer questions about their level of solidarity towards their supervisor and co-workers and at the same time they were asked to indicate how much cooperation they get from their supervisor and co-workers. This information is likely to be affected by common-source bias (Dionne, Yammarino, Atwater, & James, 2002). Unfortunately, we were not able to use measure from different sources. At this moment, the MGM analysis provides an answer to the question how seriously using data from one source biases the results. We found four different factors measuring OS. If the data were completely biased, the different variables would mesh into one factor. However, this is only one piece of evidence and to investigate the impact of common-source bias, additional information of different actors is needed. Furthermore, this chapter only serves as an introduction to the concept of OS and its theoretical background. Our research tests the usefulness of the scales and how they relate to the OCB dimensions. However, what factors influence OS and how this can be explained remains to be discussed. Future research is needed to study these relationships in more detail, at which point we will be better able to answer the question of whether OS can advance research in organizational behavior.

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4

SERIAL SOLIDARITY

The Effects of Experiences and Expectations on Cooperative Behavior within Teams^{4.1}

4.1 INTRODUCTION

Solidary types of behavior among employees are important in team-based organizational structures because individual employees are expected to work together to accomplish a common task. Within these structures, solidary types of behavior among team members do not arise automatically (Orr, 2001), especially when the interest of the team is in conflict with individual interests (March & Simon, 1958). Therefore, managers devise mechanisms to create solidary relationships between employees that increase cooperation behaviors between team members (Miller, 1992; Aquino, 1998). For a long time, solidarity within organizations has been created by long-lasting employment relationships, such as internal labor markets, which are characterized by life-long employment and relatively stable relationships (Merton, 1940; Doeringer & Piore, 1971; Osterman, 1987; Wachter & Wright, 1990). As dynamics on labor markets and within organizations increase, the stability of internal labor markets declines (Aaronson & Sullivan, 1998; Valletta, 1999; Partridge & Dalenberg, 2000). In order to cope with internal and external changes, organizations react by adjusting the workforce, for instance by using temporary employment contracts, and creating an external labor force (Pfeffer & Baron, 1988; Kalleberg, 2000; Wiens-Tuers & Hill, 2002).

^{4.1} This paper has been submitted for review (Ferry Koster & Karin Sanders, 2005)

Temporary employment contracts refer to fixed-term labor contracts that give organizations freedom in hiring and firing workers (Pfeffer & Baron, 1988; Davis-Blake & Uzzi, 1993; Parker, Griffin, Sprigg & Wall, 2002).

The use of temporary employees may affect intra-team relationships and the subsequent behavior among team members because of the shorter duration of the work relationships between them (Pfeffer & Baron, 1988; Davis-Blake & Uzzi, 1993). Therefore, it is generally assumed that external flexibility results in a job-focused relationship between the organization and the employee in which employers are primarily concerned with encouraging a high level of task performance by employees, without requiring their commitment to, or concern for, the organization's overall success or survival (Tsui, Pearce, Porter & Hite, 1995). Based on this assumption, it is expected that temporary employees show less solidary behavior toward the organization and co-workers than permanent employees do. Empirical research comparing temporary and permanent workers shows, however, that this relationship may be more complex. Current research findings of the effects of temporary work status on employee behavior are summarized as follows: some studies find negative effects (Moorman & Harland, 2002), others find no effects (Ashford, Lee & Bobko, 1989; Pearce, 1998; Van Dyne & Ang, 1998; Organ & Paine, 2000), and other researchers find positive effects (Hogan & Ragan, 1995). These mixed results are puzzling and need further investigation.

This chapter aims at explaining the effects of temporary employment relationships on employee behavior by focusing on temporal embeddedness (Granovetter, 1985), which entails the past and the future of social relationships (Buskens, 2002). We argue that to understand differences between temporary and permanent workers with regard to their solidarity toward co-workers, the temporal embeddedness of relationships (Granovetter, 1985; Raub & Weesie, 2000; Buskens, 2002) should be taken into account. The rationale behind this is that some important aspects of solidarity may be overlooked by focusing merely on the employment status – temporary versus permanent – of employees. By making a distinction between temporary and permanent employment contracts it is assumed that temporary workers have a short-term relationship with their co-workers and that permanent workers have a long-term relationship with their co-workers. However, this assumption about the employment relationship may not hold in all instances, since both temporary and permanent workers can have relationships with co-workers that have a limited time-horizon. For instance, permanent workers may be moving to a different part of the organization or may even consider leaving the organization completely. This aspect of intra-organizational relationships cannot be accounted for when a distinction between temporary and permanent employment contracts is

made. Moreover, temporal embeddedness not only refers to the length of the relationship but also to the behavior that employees show toward each other. This study investigates the effects of experiences with co-workers in the past and expectations about future interactions with them. The research question of this chapter is: *Can solidarity toward co-workers be explained by the temporal embeddedness of relationships between employees?*

This chapter is structured as follows. In section 4.2, the theoretical relationship between temporal embeddedness and solidary behavior is discussed and two hypotheses are formulated. Then these hypotheses are tested using two different datasets. Section 4.4 reports on a large-scale survey and in section 4.5 vignette data are analyzed. In section 4.6 the findings of the two studies are summarized. Section 4.7 provides theoretical and practical implications of the results.

4.2 TEMPORAL EMBEDDEDNESS

Even though it is widely understood that relationships within teams span a certain time-frame and that the past and future of these relationships influence current behavior of team members, the effects of temporary employment relationships on behavior in teams have received very little attention (McGrath, 1986; Gersick, 1988; McGrath, 1990; Harrison, Mohammed, McGrath, Florey & Vanderstoep, 2003). Since employers make increasing use of flexible work arrangements, such as temporary employment contracts, temporal issues within teams become more salient (Cohen & Bailey, 1997; Kozlowski & Bell, 2002). This chapter focuses on effects of temporary work by examining the temporal embeddedness of employees. To do so, the dyadic relationship between co-workers, consisting of two employees who are interacting with each other, is analyzed. The co-workers are named Ego (the focal employee) and Alter (the other employee) and they are assumed to be in a relationship with each other for a certain time in which social exchanges take place (Homans, 1958; Thibaut & Kelley, 1959; Blau, 1964; Ekeh, 1974). Two mechanisms through which solidary types of behavior between Ego and Alter can develop and sustain are learning from past interactions and control through future interactions; also referred to as the *shadow of the past* and the *shadow of the future* (Axelrod, 1984; Buskens, 2002; Buskens & Raub, 2002). The effects of learning and control on solidarity toward co-workers are hypothesized in the following two sections^{4.2}.

^{4.2} In this chapter, the term 'control' has two meanings: (1) 'control of the behavior of others' and (2) 'statistical control'. To distinguish them from each other 'control' refers to control of others' behavior and 'statistical control' is used to refer to the use of control variables in the regression analyses.

4.2.1 LEARNING FROM PAST EXPERIENCES

Learning about the behavior of Alter by Ego may affect the level of solidarity that Ego shows toward Alter. The reasoning behind this expectation is that solidary types of behavior require a certain level of trust between actors (Raub, 1997). Trust problems (Dasgupta, 1988; Coleman, 1990) between Ego and Alter have two characteristics. First, both Ego and Alter gain when trust is placed and honored. Second, Ego takes a risk when placing trust in Alter because Alter can take advantage of the situation and abuse Ego's trust (Raub, 1997). An example may illustrate these characteristics. When Alter asks Ego for a favor, a trust problem arises. Ego can decide to help Alter, but does not know for sure that Alter will return the favor whenever Ego needs help from Alter. It is quite possible that Alter will behave opportunistically by accepting Ego's help and by not showing solidarity when Ego is in need. Given this trust problem, the likelihood that Ego will assist Alter may be very low, because Ego has limited information about the trustworthiness of Alter.

Trust problems between Ego and Alter arise because Alter has the possibility to abuse Ego's trust. Therefore, Ego will be restrained in placing trust. If Ego is better capable of estimating the trustworthiness of Alter, the expectation is that Ego will be more willing to place trust in Alter. Ego is better able to estimate Alter's trustworthiness when there have been previous interactions between Ego and Alter, because Ego has had the possibility to gather information about the behavior and intentions of Alter. Therefore, when time passes and there are more interactions between Ego and Alter, Ego knows whether it is reasonable to expect that Alter will be solidary or not (Rholes, Newman & Ruble, 1990; Hinds, Carley, Krackhardt, & Wholey, 2000). It is assumed that a solidary move from Alter will be answered with a solidary move from Ego. Or, to put it differently, if Ego has shown solidarity toward Alter in the past and Alter does not show solidarity toward Ego on a later occasion, Ego knows that Alter has taken advantage of Ego and thus is not a reliable person. Ego uses this knowledge to decide whether to be solidary toward Alter or not. Therefore, the level of solidarity from Ego toward Alter depends on the behavior that Alter has shown toward Ego over the course of their relationship. A long history of successful interactions between Ego and Alter will have a positive effect on the solidarity of Ego toward Alter (Batenburg, Raub, & Snijders, 2003). Applied to the relationship between employees, the following hypothesis is formulated.

Previous Experiences Hypothesis (Hypothesis 4.1):

Positive previous experiences with co-workers are positively related to solidarity toward co-workers.

4.2.2 CONTROL THROUGH FUTURE INTERACTIONS

Learning through past interactions is one possible solution to the trust problem between Ego and Alter. Another source of trust between Ego and Alter is provided by the control mechanism that is made possible if Ego and Alter share a common future. A shared future promotes solidarity through conditional cooperation (Axelrod, 1984). When it is likely that there will be interactions between Ego and Alter in the future, Ego can try to exercise control over the behavior of Alter through the provision of rewards for solidary types of behavior and punishments for non-solidary types of behavior. As a result, it becomes rewarding for Alter to show solidarity toward Ego. If there is a shadow of the future between Ego and Alter, a series of cooperative moves between Ego and Alter can occur, since a good move by Alter can be followed by a reward by Ego and a bad move by Alter can be reciprocated by a sanction by Ego (Axelrod, 1984; Spicer, 1985; Buskens, 2002).

The effect of future interactions between Ego and Alter on Ego's solidarity is expected to be influenced by Alter's behavior (Raub, 1997; Batenburg et al., 2003). When there have been no interaction between Ego and Alter in the past, Ego does not have direct information about how Alter will behave in the future. Nevertheless, if they have interacted in the past, a solidary relationship between Ego and Alter may have developed. On top of that, people tend to expect that another person's past behavior will be similar to that in future interactions (Rholes et al., 1990). When there have been previous interactions between them, Alter may already have shown the willingness to be solidary toward Ego. If Alter has been solidary toward Ego, a long shadow of the future will increase Ego's solidarity because Ego has a good reason to trust Alter to be solidary in the future as well. If Ego and Alter do not expect to interact in the future or when there is a lack of solidarity between them, these incentives are much lower. Therefore, a solidary relationship between Ego and Alter in combination with a long shadow of the future will increase Ego's solidarity toward Alter. This leads to the second hypothesis.

Future Interactions Hypothesis (Hypothesis 4.2):

Given previous solidarity from co-workers, the shadow of the future is positively related to solidarity toward co-workers.

4.3 DATA ANALYSIS

Two different datasets are used to test the hypotheses. The first dataset consists of employee level data that are gathered across several organizations. The second dataset is gathered with a vignette study. These datasets differ with regards to a number of dimensions, summarized in Table 4.1.

TABLE 4.1
Overview of the two studies

	Study 1: Survey	Study 2: Vignette Study
Methodology	Large-scale survey research	Experimental design, assigning conditions to respondents
Level of Analysis	Individual employee	Vignette-conditions
Relationship	Respondent with co-workers	Respondent with a hypothetical co-worker
Number of Respondents	736	260 respondents; 1040 vignettes
Number of Organizations	10	5

An important difference between the two datasets lies in their data gathering method. The survey data are gathered among employees, asking them questions about their real-life behavior and relationships with co-workers. The vignette study is fundamentally different; it does not ask questions about real-life situations, but instead a hypothetical work situation is created in which experimental conditions are randomly assigned to respondents. Therefore, the survey data are examined at the individual employee level and the vignettes are examined at the level of the experimental conditions. Furthermore, the methods differ in how detailed the information is that they provide. In a large-scale survey, it is impossible to ask all employees about their relationships with all their co-workers because this requires too much time and effort from researchers and respondents^{4.3}. The vignette study

^{4.3} In some studies, data on complete networks of employees are gathered, but they do so by limiting the amount of employees and the number of questions.

supplements the survey data in that sense, because it focuses on the specific dyadic relationship between the respondent and a hypothetical co-worker.

Using different datasets to test the same hypotheses is a form of triangulation (Denzin, 1978). Since every research strategy has its limits, combining information from different data methods to similar research problems can be a useful way to deal with these flaws in research methods (Denzin, 1978; Scandura & Williams, 2000). The results of studies that differ in research method are compared and increase the validity of the findings. If these findings converge, there is reason to believe that the results are valid and are not the result of the method that was used to generate them (Campbell & Fiske, 1959). Comparisons of the outcomes across methods are a vehicle of cross-validation and if the same conclusions are reached through them, findings turn out to be more robust and there is more certainty about the phenomenon studied (Jick, 1979).

4.4 STUDY 1: SURVEY

4.4.1 RESPONDENTS

Respondents are recruited from ten organizations. The organizations represent both the public and private domain and consist of a ministry, a nursing home, a supportive staff of a university, an engineering organization, an art foundation, a consultancy firm, a housing foundation, a recreation center, a municipality, and a governmental organization. In total, 736 employees participated in this study. Table 4.2 shows that the organizations differ in some respects. Overall, 10 percent of the respondents in the dataset have a temporary contract. In the art foundation, the lowest number of respondents has a temporary employment contract (6 percent); the recreation center is at the other end of the extreme with 56 percent temporary workers. The nursing home employs the highest number of female workers (93 percent), while at the supportive staff of the university no female workers are employed. The mean educational level of the employees – measured on a scale, ranging from 1 (no education completed) to 9 (Ph.D. level completed) – in the dataset is 5.6. On average, the consultancy firm has the highest educational level (mean = 6.9) and the recreation center employs the least educated workers (mean = 4.6).

TABLE 4.2
Descriptive statistics of the organizations (survey data)

	Number of Respondents	Percentage temporary workers	Percentage women	Mean educational level
Ministry	266	8	33	6.1
Nursing home	98	8	93	4.7
Supportive staff university	11	18	0	5.6
Engineering organization	17	18	6	4.7
Art foundation	17	6	65	6.4
Consultancy firm	15	20	53	6.9
Housing foundation	14	7	36	4.9
Recreation center	16	56	73	4.6
Municipality	122	8	39	5.0
Governmental organization	160	9	45	5.8
Total	736	10	45	5.6

4.4.2 PROCEDURE

Questionnaires are developed to gather data among employees (for the complete questionnaire see Lambooij, Sanders, Koster, Emmerik, Raub, Flache, & Wittek, 2003). In each of the organizations, a student was present during this period to collect data. The aim of this data collection procedure is to increase the response rate. Another advantage is that the students could respond to employees' questions and complaints regarding the questionnaire or the research in general. By using this procedure, respondents are better informed about the goal of the research and are probably more willing to participate.

4.4.3 MEASURES

DEPENDENT VARIABLE

The items measuring *solidarity toward co-workers* are based on Lindenberg (1998). Solidarity refers to consistent cooperative behavior across the following five social dilemma situations, applied to behavior in organizations (Sanders, Schyns, Koster & Rotteveel, 2003; Sanders, 2004; Koster & Sanders, 2004): common good situation, sharing situation, need situation, breach temptation, and mishap situation (Lindenberg, 1998). The five items to measure solidarity toward co-workers are: (1) "I help my co-workers to finish tasks"; (2) "I am willing to help my co-workers when things go wrong unexpectedly"; (3) "I apologize to my co-workers when I

have made a mistake”; (4) ‘I try to divide the pleasant and unpleasant tasks equally between myself and my co-workers’; and (5) “I live up to agreements with my co-workers” (Cronbach’s Alpha = .84).

INDEPENDENT VARIABLES

The hypotheses state that solidarity from Ego is influenced by past interactions with Alter and the likelihood of future interactions with Alter. Information about this is generated by using variables about the past and future that respondents share with their co-workers and the behavior that co-workers show toward the respondents.

Past with co-workers is measured by asking respondents to indicate with how many of their co-workers they have been working in the same team (1 = with no one; 7 = with everyone). The **future with co-workers** is measured by asking employee about their expectation about the future. Respondents are asked to indicate how long they think they will be working with the same co-workers (1 = with no one; 7 = with everyone). The respondents are asked to rate the level of **solidarity from co-workers**, with the five items applied to the co-workers. The five items measuring solidarity toward co-workers are: (1) “My co-workers help me to finish tasks”; (2) “My co-workers are willing to help me when things go wrong unexpectedly”; (3) “My co-workers apologize to me when they have made a mistake”; (4) “My co-workers try to divide the pleasant and unpleasant tasks equally between them and me”; and (5) “My co-workers live up to agreements with me” (Cronbach’s Alpha = .91).

TEMPORARY EMPLOYMENT RELATIONSHIPS

The investigate whether employment status – permanent versus temporary – influences the level of solidarity toward co-workers, this variable is added to the regression model. **Temporary employment relationships** include those arrangements where there is no implicit or explicit contract for long-term employment (Polivka & Nardone, 1989). The respondents are given three options to indicate their employment status: (1) permanent contract; (2) temporary contract with an implicit or explicit agreement that they can stay after the contract ends; and (3) temporary contract without an implicit or explicit agreement to continue the employment relationships. Since option 3 included temporary workers according to the definition, this category is recoded into 1 and the other categories are recoded into 0.

STATISTICAL CONTROL VARIABLES

Several statistical control variables are used in the study. The level of autonomy may affect solidary types of behavior because others cannot easily monitor an employee who has a job with a high level of autonomy. Besides that, variables are added to investigate the effects of team size, gender, and the organization. **Autonomy** is measured with a scale combining three aspects of the job: the breadth of the job, the level of responsibility, and autonomy. Cronbach's Alpha = .70 (1 = low; 7 = high). **Size of the team** is measured by asking the number of co-workers in their team. This variable ranges from 1 (less than 5) to 4 (more than 20). **Gender** is coded 0 (male) and 1 (female). There may be differences between organizations regarding the solidarity that employees show toward co-workers. The effect of **organizational level** variables on individual behaviors can be examined using multilevel regression analysis (Bryk & Raudenbush, 1992). However, this chapter focuses on variables at the individual level and no hypotheses are formulated about which organizational factors may influence this behavior. Therefore, to examine if membership of a particular organization influences the results, dummy variables are added for each organization.

TABLE 4.3
Means, standard deviations, and correlations (survey data)

	Mean	s.d.	1.	2.	3.	4	5.	6.	7.
1. Solidarity toward co-workers	5.90	.716	.84						
2. Solidarity from co-workers	5.35	1.04	.55**	.91					
3. Past with co-workers	4.15	1.78	.14**	.18**					
4. Future with co-workers	4.57	1.62	.16**	.30**	.42**				
5. Temporary employment relationship	.10	.30	-.03	-.07 [†]	-.14**	-.13**			
6. Gender (1 = female)	.46	.50	.14*	.02	-.02	.03	-.04		
7. Team size	2.84	1.05	-.11**	-.22**	-.07 [†]	-.09*	.04	-.09*	
8. Autonomy	5.64	.87	.09*	.02	.06	.07 [†]	-.10**	-.05	.01

n = 674. Cronbach's Alphas are on the diagonal.

[†]p < .10; * p < .05; ** p < .01

4.4.4 RESULTS OF STUDY 1

Table 4.3 gives an overview of the means and standard deviations of the variables as well as the correlation coefficients among the variables in the first study. Solidarity toward co-workers is related to most of the variables, except for temporary employment status ($r = -.03$, n.s.). Solidarity toward co-workers has a strong positive relation with solidarity from co-workers ($r = .55$, $p < .01$), and moderate positive relationships with the past with co-workers ($r = .14$, $p < .01$) and the expected future with co-workers ($r = .16$, $p < .01$). According to these bivariate correlations, women show more solidarity toward co-workers than men do. Finally, solidarity toward co-workers is negatively related to team size ($r = -.11$, $p < .01$) and – contrary to what was expected – positively to autonomy ($r = .09$, $p < .05$).

Ordinary Least Squares (OLS) regression is used to test the hypotheses. It is assessed to what extent the data meet the key assumptions of OLS regression (Fox, 1991). The skewness and the kurtosis of the dependent variable – solidarity toward co-workers – are examined to investigate whether it approaches a normal distribution. If the variable is normally distributed, both its skewness and kurtosis should be zero. The variable is distributed with a skewness of $-.48$ (s.e. = $.09$) and a kurtosis of $.29$ (s.e. = $.18$). These statistics indicate that the distribution is only slightly left-skewed compared to a normal distribution. In addition, the normal probability plot is examined visually. This plot shows that the points are symmetrically distributed around a diagonal line, indicating that the variable has a relatively normal distribution.

The data are gathered at ten organizations and therefore there may be an organization-level effect on solidarity toward co-workers. It is tested whether there are differences between the organizations concerning the level of solidarity toward co-workers. The results show that this is not the case ($F(9,725) = 1.388$, n.s.). Hence, the analyses are performed with OLS regression. To make sure that there are no effects of organization type, organization dummies are added to the regression analyses.

Learning and control refer to the length of the relationship in combination with the behavior of the other person. Employees are assumed to have positive experiences with their co-workers if there is a combination of past interactions with co-workers and solidarity from co-workers. Therefore, learning through the ‘shadow of the past’ is investigated by creating an interaction term of past with co-workers with solidarity from co-workers. Control through the ‘shadow of the future’ entails the interaction between expected future with co-workers and solidarity from co-workers. The regression analysis includes the main effects and the interaction terms,

which are likely to be highly correlated. To reduce multicollinearity, the variables are centered (Aiken & West, 1991).

The regression analysis is performed in three steps. The first model contains the statistical control variables. In the second model, the main effects of past and future interactions are added to the model. In the third model, the two hypotheses are tested by investigating the effects of the interaction terms. The results of the regression analyses are shown in Table 4.4.

Model 1 shows the effects of the statistical control variables and the level of solidarity from co-workers on solidarity toward co-workers. The explained variance of model 1 is 4 percent. Throughout the regression models 2 and 3, the statistical control variables gender and autonomy remain to affect solidarity toward co-workers. The organizational dummies show that solidarity toward co-workers does not vary a lot between organizations. Model 2, examines the effects of the length of the past with co-workers and the expected length of the future with co-workers. Length of the past has a small positive effect ($b = .06, p < .10$) and the expected future does not have an effect ($b = -.04, n.s.$). Model 3 tests the hypotheses that are formulated in this chapter. There is a small positive interaction effect from past with solidarity from co-workers on solidarity toward co-workers ($b = .07, p < .05$). This finding provides support for hypothesis 1. The interaction effect between solidarity from co-workers and past with co-workers is shown in Figure 4.1.

TABLE 4.4
Results of regression analysis for solidarity toward co-workers (survey data)

	Hypothesis	(1)	(2)	(3)
Solidarity from co-workers			.55** (16.52)	.59** (17.78)
Length of past			.06 [†] (1.78)	.06* (1.63)
Length of future			-.04 (1.00)	-.02 (.62)
Learning ^a	+			.07* (1.96)
Control ^b	+			.15** (3.93)
TEMPORARY EMPLOYMENT RELATIONSHIP				
		.02 (.45)	.02 (.66)	.03 (.87)
STATISTICAL CONTROLS				
Gender (1 = female)		.15** (3.57)	.16** (4.48)	.14** (4.15)
Team size		-.11** (2.92)	.01 (.21)	.01 (.37)
Autonomy		.11** (2.84)	.10** (3.15)	.11** (3.57)
ORGANIZATION DUMMIES				
Ministry		-.06 (.37)	-.06 (.43)	-.06 (.45)
Nursing home		-.04 (.35)	-.06 (.59)	-.05 (.57)
Supportive staff university		.00 (.01)	.03 (.55)	.03 (.58)
Engineering organization		-.02 (.34)	-.06 (1.18)	-.07 (1.30)
Art foundation		.01 (.21)	-.01 (.21)	-.01 (.16)
Consultancy firm		-.11 [†] (1.81)	-.09 [†] (1.95)	-.09 [†] (1.89)
Housing foundation		-.02 (.38)	-.04 (.83)	-.04 (.82)
Governmental organization		-.07 (.52)	-.09 (.86)	.09 (.92)
Municipality		-.05 (.41)	-.08 (.71)	-.07 (.67)
Recreation center (reference category)		---	---	---
Adjusted R ²		.04	.35	.36
R ² change		.06**	.31**	.02**

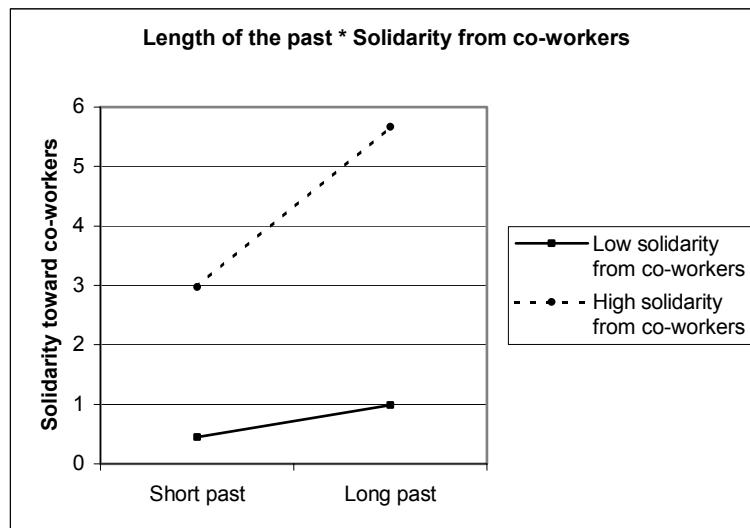
n = 736. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

^a Interaction between past with co-workers and solidarity from co-workers.

^b Interaction between future with co-workers and solidarity from co-workers.

[†] p < .10; * p < .05; ** p < .01

FIGURE 4.1
Interaction effect of solidarity from co-workers and past with co-workers
on solidarity toward co-workers (survey data)



The interpretation of figure 4.1 is that solidarity toward co-workers is low if co-workers do not show solidarity toward the employee, irrespective of the length of the past between the employee and the co-workers. The level of solidarity toward co-workers is higher if the co-workers show solidarity toward the employee, also when they share a short past. Hypothesis 4.1 emphasizes that behavior shown by co-workers moderates the effect of the length of the relationship with co-workers. This expectation is supported. The relation between the past with co-workers and solidarity toward co-workers is moderated by the solidarity from co-workers. A long past combined with solidarity from co-workers is positively related to solidarity toward co-workers.

Expectations about the future combined with solidarity from co-workers have a positive effect on solidarity toward co-workers ($b = .15, p < .01$), providing support for hypothesis 4.2. The interaction effect of mutual future and solidarity from co-workers is shown in Figure 4.2.

FIGURE 4.2
Interaction effect of solidarity from co-workers and future with co-workers
on solidarity toward co-workers (survey data)

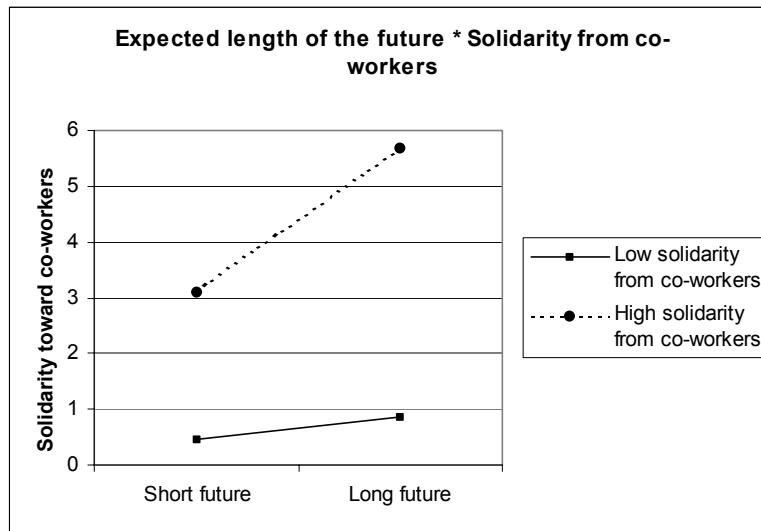


Figure 4.2 shows that the level of solidarity toward co-workers is high when there is a high level of solidarity from co-workers and that the combination of solidarity from co-workers with the expectation that the relationship will continue is associated with the highest level of solidarity toward co-workers.

4.5 STUDY 2: VIGNETTE STUDY

4.5.1 RESPONDENTS

The respondents are members of five different organizations: a university, a military organization, a consultancy firm, a housing company, and a recreation center. In total 260 employees participated, responding to 1040 vignettes. The employees of the consultancy firm, the housing company, and the recreation center also participated in the first study (41 of the 260 respondents).

Table 4.5 summarizes the characteristics of the respondents. The largest part of the employees is employed at the military organization (181 respondents). 12 Percent of the employees in the study have a temporary employment contract. From the respondents employed at the consultancy firm and the housing company no one is employed temporarily. 38 percent of the recreation center personnel have a temporary contract. In the dataset, the military organization has the fewest women

(13 percent) and the recreation center the most (47 percent). The mean level of education is highest at the university (mean = 7.1) and lowest at the recreation center (mean = 4.7).

TABLE 4.5
Descriptive statistics of the organizations (vignette data)

	Number of respondents	Number of vignettes	Percentage temporary workers	Percentage women	Mean educational level
University	38	152	21	47	7.1
Military organization	181	724	9	13	5.2
Consultancy firm	12	48	0	58	6.9
Housing foundation	13	52	0	38	4.9
Recreation center	16	64	38	73	4.7
Total	260	1040	12	25	5.5

4.5.2 PROCEDURE

The second study is based on data from a vignette study (Nosanchuk, 1972; Alexander & Becker, 1978; Sniderman & Grob, 1996), a research strategy that enables researchers to focus on very specific independent variables using experimental conditions. The vignette methodology is used in other studies answering similar research questions (Rooks, Raub, Tazelaar & Selten, 2000; Buskens, 2002; Batenburg et al., 2003).

In the current study, a vignette is used that consists of a short description of a situation in the workplace and a hypothetical co-worker. The description of the situation is the fixed part of the vignette and the description of the other person (co-worker Smith) includes the variables about the past and the future. The description of the social situation is as follows: ('help in need').

SITUATION: 'HELP IN NEED'

Smith is a co-worker of yours and he is working hard to finish an assignment in time. It is important for Smith and your organization that the task is finished before the deadline. Although Smith tries hard, he is not able to do this on his own and asks you to help him out. Helping Smith means that you have to leave your own work behind temporarily.

After the description of the situation, the past and future characteristics of co-worker Smith are mentioned. The past and future conditions of the vignettes are presented in Table 4.6.

TABLE 4.6
Overview of the six vignettes

	PAST		FUTURE		VIGNETTE
	No help	No past	Help	Future	
a.	1	0	0	0	Smith did not help you on a similar occasion in the past and Smith will leave the organization within a month
b.	1	0	0	1	Smith did not help you on a similar occasion in the past and Smith and you will work together for at least a year
c.	0	1	0	0	Smith and you have not worked together for a long time and Smith will leave the organization within a month
d.	0	1	0	1	Smith and you have not worked together for a long time and Smith and you will work together for at least a year
e.	0	0	1	0	Smith did help you on a similar occasion in the past and Smith will leave the organization within a month
f.	0	0	1	1	Smith did help you on a similar occasion in the past and Smith and you will work together for at least a year

0 = item is not presented on the vignette; 1 = item is presented on the vignette

Altogether, there are six different vignettes containing the past and future that respondents share with Smith. After the description of the situation and the other person, respondents are faced with the dilemma of helping Smith and are asked to indicate the likelihood that they will provide help to this person (on a scale ranging from 0 to 10). Each respondent is asked to do this for four different vignettes.

Individual persons can show a person-specific level of solidarity toward others, for instance resulting from their personality or other individual characteristics. Besides that, their level of solidarity is assumed to be affected by their social context. The variables in the vignette study are the experimental conditions referring to a part of this social context: the past and future characteristics of co-worker Smith. If these conditions affect the solidarity with co-worker Smith, they should be caused by these randomly assigned conditions and not by individual differences. Because participants are asked to respond to four different vignettes, they are allowed to show variation in their intention to help Smith. As a result, the

vignette data has a nested structure with vignettes at the lowest level and respondents at the highest level. Multilevel regression analysis (Bryk & Raudenbush, 1992; Snijder & Bosker, 1999) is applied to deal with the nested structure of the data to estimate how much of the helping behavior of the respondents is an effect of individual differences and how much can be attributed to the experimental conditions.

4.5.3 MEASURES

DEPENDENT VARIABLE

Solidarity toward co-worker. After reading the vignette, respondents are asked to indicate on a scale ranging from 0 to 10 if they would provide help to the co-worker.

INDEPENDENT VARIABLES

The experimental conditions are summarized in Table 4.6. All vignettes included one factor concerning the past and one factor about the expected future with the co-worker. **Past experiences with co-worker** are varied on three levels. The respondents read one of the following statements about the past behavior of the co-worker: (1) “Smith did not provide help on a similar occasion in the past” (referred to as ‘no help’); (2) “You and Smith have not been working together for a long time” (referred to as ‘no past’); and (3) “Smith did help you on a similar occasion in the past” (referred to as ‘help’). On each of the vignettes, one of these conditions is shown. The conditions are recoded into dummy variables. In the analyses, the ‘no past’ condition is used as the reference category to examine the effects of positive and negative experiences in the past on helping behavior. Expectations about the **future with the co-worker** are varied with two levels: (0) “Smith will leave the organization within a month” (referred to as: ‘no future’); and (1) “Smith and you will work together for at least a year” (referred to as: ‘future’).

TEMPORARY EMPLOYMENT RELATIONSHIPS

The investigate whether employment status – permanent versus temporary – influences the level of solidarity toward co-workers, this variable is added to the regression model. **Temporary employment relationships** include those arrangements where there is no implicit or explicit contract for long-term employment (Polivka & Nardone, 1989). The respondents are given three options to indicate their employment status: (1) permanent contract; (2) temporary contract with an implicit or explicit agreement that they can stay after the contract ends; and (3) temporary contract without an implicit or explicit agreement to continue the employment

relationships. Since option 3 included temporary workers according to the definition, this category is recoded into 1 and the other categories are recoded into 0.

STATISTICAL CONTROL VARIABLES

To compare the outcome of the two studies, the same statistical control variables are used in study 2 as in study 1. *Autonomy* is measured with a scale combining three aspects of the job: the breadth of the job, the level of responsibility, and autonomy. Cronbach’s Alpha = .70 (1 = low; 7 = high). *Size of the team* is measured by asking the number of co-workers in their team. This variable ranges from 1 (less than 5) to 4 (more than 20). *Gender* is coded 0 (male) and 1 (female). There may be differences between organizations regarding the solidarity that employees show toward co-workers. If membership of a particular organization influences the results is examined by adding dummy variables for each *organization*.

4.5.4 DISTRIBUTION OF THE EXPERIMENTAL CONDITIONS

To make statistical tests of the vignette data possible, it is first of all required that the whole 3x2 design has enough participants responding to each of the six conditions. If there are empty cells, comparisons between the conditions become problematic. Besides that, it is necessary that the individual characteristics – the statistical control variables – are independent from the vignette conditions. If this requirement is not met, it may be impossible to distinguish individual effects from experimental effects. Finally, the vignette conditions should be independent of each other to make clear distinctions between the experimental effects. The respondents are equally distributed over the experimental conditions, therefore the requirements hold. Table 4.7 shows the correlation coefficients among the dependent variable and the experimental conditions

TABLE 4.7
Means, standard deviations, and correlations (vignette data)

	Mean	s.d.	1.	2.	3.	4.
1. Helping behavior	7.73	1.85				
2. No help	.35	.48	-.28**			
3. No past	.32	.47	.06	-.50**		
4. Help	.33	.47	.23**	-.52**	-.48**	
5. Future	.49	.50	.05	-.01	.04	-.03

n = 1040 vignettes.
 † p < .10; * p < .05; ** p < .01

The correlation coefficients between three dummy variables measuring the past conditions and the future dummy are of interest. The correlation coefficients are -.01, .04, and -.03. The three coefficients are not significant, indicating that past and the future conditions are randomly assigned to the respondents. Table 4.7 also shows the relationship between the three conditions measuring the past. Because these are dummy variables measuring three mutually exclusive variables, the relationships between them are negative and highly significant.

4.5.5 RESULTS OF STUDY 2

Table 4.7 gives an overview of the correlation coefficients among the level of helping behavior and the vignette variables. The intention to help Smith is lower if Smith did not provide help in the past ($r = -.28, p < .01$) and higher if Smith did provide help ($r = .23, p < .01$). The absence or presence of future interactions with Smith does not affect the respondent's intention to help Smith ($r = .05, n.s.$).

Since every respondent is asked to fill in four vignettes, there is a two-level data structure with vignettes nested in respondents. Therefore, not all measurements are independent of each other. To deal with this problem, multilevel regression analysis is conducted to distinguish between the variation caused by individuals and the variation caused by the vignette conditions. Before performing the multilevel analysis, the normality of the distribution of the variable helping behavior is examined. The distribution of the variable is skewed ($-1.04, s.e. = .08$) and has a kurtosis of 1.31 ($s.e. = .15$). A visual examination of this distribution shows that many respondents have a high intention to help Smith. To decrease the skewness and the kurtosis, the variable is transformed by taking its square root. The distribution of the square root of helping behavior is less skewed ($.30, s.e. = .08$) and has a lower kurtosis ($-.21, s.e. = .15$), which approaches a normal distribution. Examination of the normal probability plot reveals that the data points are distributed around the diagonal. To investigate if there are systematic differences between the original dependent variable and its square root, different regression analyses are performed with each of them as the dependent variable. There are no important differences between the two models. Therefore, the model with helping behavior as the dependent variable is used for further examination.

Furthermore, a comparison is made between the solidarity of the respondent toward co-workers as indicated in the survey and their mean helping behavior across the four vignettes. The correlation coefficient between these two variables is positive and significant ($r = .20, p < .01$). Employees that are showing solidarity toward co-

workers in daily situations also tend to help Smith. It also shows that this does not completely explain the helping behavior in the vignettes.

It is studied if there is an organizational effect of helping behavior. A comparison at the organizational level shows that the intention to help is significantly lower in one of the organizations ($F(5,1035) = 7.725; p < .01$). However, a preliminary analysis in which organizational level is added to the multilevel analysis does not yield differences with the models without the organizational level. Therefore, organizational dummies are added to the model in the same fashion as in study 1 to compare the results.

The two hypotheses are investigated in the following steps. The first model contains the statistical control variables. In the second model, the past with the co-worker is included. The third and final model includes the future variables. The results of the multilevel regression analyses of the vignettes are shown in Table 4.8. According to the results in Table 4.8, there are two effects from the statistical control variables on helping behavior. The respondents with more autonomy tend to be more helpful and the respondents employed at the university have a lower tendency to help the co-worker than the employees of the other organizations in the sample. Hypothesis 1 states a positive relation between the solidarity of Ego toward Alter and the level of solidarity that Alter has shown in the past. In model 2 this expectation is examined. Adding the vignette conditions about the past of the co-workers, the model significantly improves ($Deviance = 183.67, Df = 2$). Lack of co-worker solidarity in the past has a negative relation with solidarity toward the co-worker ($b = -.23, p < .01$). Solidarity toward the co-worker has a positive relation with help received from the co-worker in the past ($b = .12, p < .01$). These findings thus provide support for hypothesis 4.1; the intention to help the co-worker depends on the behavior that the co-worker has shown in the past. Hypothesis 4.2 states that there will be a positive relationship between solidarity from Ego toward Alter and the presence of both solidarity from Alter and a common future between Ego and Alter. This hypothesis is tested in model 3, which includes the presence or absence of a common future with the co-worker and two interaction terms: no solidarity from the co-worker with a common future and solidarity from the co-worker with a common future. Model 3 shows that having a common future has a strong effect on solidarity toward the co-worker ($b = .05, p < .05$). There is no significant interaction found of solidarity from the co-worker with the likelihood of future interactions. Therefore, the findings provide partial support for hypothesis 2. A longer shadow of the future between Ego and Alter does increase Ego's intention to help Alter. This effect is not influenced by the behavior that Alter has shown in the past.

TABLE 4.8
Results of multilevel regression analysis of helping behavior (vignette data)

	Hypothesis	(1)	(2)	(3)
VIGNETTE LEVEL (LEVEL 1)				
Learning				
No help	-		-.23** (.03)	-.23** (.03)
Help	+		.12** (.03)	.12** (.03)
No past (reference category)			---	---
Control				
Future				.05* (.02)
No help * Future	-			-.04 (.03)
Help * Future	+			.01 (.03)
No past * Future (reference category)				---
INDIVIDUAL LEVEL (LEVEL 2)				
TEMPORARY EMPLOYMENT RELATIONSHIP				
		.00 (.05)	.01 (.05)	.01 (.05)
STATISTICAL CONTROLS				
Gender (1=female)		.03 (.05)	.02 (.05)	.02 (.05)
Team size		.03 (.05)	.03 (.05)	.03 (.05)
Autonomy		.11* (.05)	.12* (.05)	.12* (.05)
Organization dummies				
University		-.18* (.08)	-.17* (.08)	-.17* (.08)
Military		.00 (.10)	.02 (.10)	.02 (.10)
Consultancy firm		.02 (.06)	.03 (.06)	.03 (.06)
Housing foundation		-.06 (.07)	-.06 (.06)	-.06 (.06)
Recreation center (reference category)		---	---	---
-2*log likelihood		2614.02	2430.35	2421.74
Deviance (Df)		16.87*	183.67**	8.61*
Df		8	2	3
Variance level 2		.48 (.05)	.49 (.05)	.49 (.05)
Variance level 1		.49 (.03)	.39 (.02)	.38 (.02)
Intra-class correlation		.49	.56	.56

n = 260 respondents; 1040 vignettes. Standardized regression coefficients are reported; standard errors are in parentheses. Empty model: -2*log likelihood = 2630.89; level 2 = .52 (.06); level 1 = .49 (.03).

† p < .10; * p < .05; ** p < .01

4.6 SUMMARY OF THE FINDINGS

In this chapter, it is argued that the behavior that employees show toward co-workers can be understood by focusing on the past and future exchanges that they have with their co-workers. In literature, contradictory findings of the difference between temporary and permanent workers have been reported. Although it seems reasonable to assume that temporary workers will be less cooperative toward co-workers, studies comparing employees based on employee status provide mixed results. In this chapter it is argued that it is not the employment status per se that matters, but that employee behavior depends on the solidarity received from co-workers in the past and whether there is a likelihood of future encounters with solidary co-workers. Two studies – a survey and a vignette study – are conducted to test two hypotheses derived from the temporal embeddedness argument. Survey data are gathered to examine these effects in a natural setting. The vignette study, on the other hand, has the advantage of asking people questions about real-life situations that might occur but perhaps do not do so on a daily basis. Moreover, it provides the possibility of examining the conditions that are of theoretical interest to the researcher. Whereas the survey data provide general information about the day-to-day work situation of the respondent, the vignette study has a semi-experimental design in which certain conditions are randomly distributed and provides information that is more detailed.

Although the research methods of both studies are very different, the results reveal similar patterns. First of all, both studies found that the past that employees have with others influences their behavior toward them. According to the survey, the combination of a long past with solidary co-workers, increases solidarity toward the team. These data provide global information about the exchange relationships between employees and their co-workers. The vignette study is more detailed because it focuses on the relationship between the respondent and one particular co-worker. In the vignette study, it became even clearer how important the behavior of the other is. Negative experiences decrease the willingness to help the other person and positive experiences positively affect it. Helping a co-worker is therefore highly dependent on the behavior that this co-worker has shown in the past. The second finding is that the likelihood of future interactions influences solidarity toward co-workers. The survey data reveal that the combination of a shadow of the future and the behavior of the co-workers toward the respondent affects solidarity toward co-workers. The expectation of staying in a relationship with solidary co-workers increases the solidarity toward the co-workers. The vignette data show a direct effect of the shadow of the future – knowing that one has to work together in the future

increases the willingness to help the other person – but not an interaction with past behavior of the co-worker. The hypotheses and the findings of the two studies are summarized in Table 4.9.

TABLE 4.9
Overview of hypotheses and results

	Hypothesis	Study 1: Survey data	Study 2: Vignette data
Learning	+	Supported	Supported
Control	+	Supported	Not supported

4.7 DISCUSSION AND CONCLUSIONS

4.7.1 THEORETICAL IMPLICATIONS

The commonly made distinction between permanent and temporary workers seems to imply that by definition, permanent workers have a long-term relationship with each other and temporary workers have short-term relationships within the organization. This does not take into account that – just like temporary workers – some permanent workers will also leave the organization within a certain amount of time. Moreover, having a permanent employment relationship does not imply that one has a long-lasting relationship with co-workers. Organizational policies such as vertical and horizontal career paths may cause employees to change co-workers from time to time, which may affect existing relationships among employees. Moreover, such an approach does not take into consideration the quality of the relationship between employees which is shown to be important to understand their solidary behavior. These issues are overlooked by assuming that temporary workers have a shorter time-frame than all permanent workers. According to the two studies, permanent and temporary workers do not differ in their solidarity toward co-workers. Instead, team solidarity depends on past and future interactions of team members. This finding contributes to the research on temporary employment relationships. Researchers that examine the effects of temporary employment relationships can benefit from this result by including temporal embeddedness in their analysis.

Theoretically, the distinction is made between learning through the shadow of the past and control through the shadow of the future. The effects of having possibilities to learn about the behavior of others are shown in both of the studies, emphasizing the importance of interactions between actors to build up mutual trust

that may result in a solidary relationship. The findings concerning the control mechanism did not converge completely between the two studies. The survey study showed that a long shadow of the future between employees and co-workers was only relevant in combination with solidarity from co-workers. The findings in the vignette study were different, with a direct effect of the shadow of the future and no interaction between future and behavior of the co-worker.

A possible explanation for this may have to do with the way in which people deal with their past and especially their future with others. There is little or no uncertainty about the behavior that others have shown in the past; from the interactions that employees have had with co-workers in the past, they know how reliable they are and how likely it is that will show solidarity. Although future interactions may lead to more solidary behavior, as is shown in the survey data, the employees are not completely sure about how the co-workers may behave on later occasions. Therefore, employees may tend to be a bit cautious to show solidarity toward co-workers. As a result, the outcomes of the survey and the vignette study may be unstable, creating different results. Moreover the difference may result as well from the different methods used. In the survey, employees are asked about their day-to-day situation. In such a situation, there will be persons they like and persons they do not like. It is to be expected that they will be solidary toward persons they like. The employees responding to the hypothetical co-worker will not necessarily like or dislike the other person. Future studies are needed to further examine this result.

An additional explanation for the difference between the survey and the vignette finding may come from the level at which the questions are asked. The vignette study deals with the direct relationship between Ego and Alter, whereas the survey data asks questions about Ego in relation to multiple others in the team. This exchange relationship may have different effects. That solidarity from the team has such strong effects on solidarity from the respondent may be a result of group pressure or group norms. These effects can be present in the real-life situation of the survey data but do not play a role in the vignette study. Consequently, what may be studied in the survey data can be an effect of exchange between the individual and the group, in which norms and customs are present that cannot easily be deviated from by the individual (Coleman, 1990). This may be a strong force for individuals to stay solidary toward their co-workers over a long period. In the vignette study, the situation was isolated from these group norms and pressure. To find out whether the influence of others plays the role suggested here, requires additional research. This can also be investigated through a vignette study in which group pressure or solidarity norms within the team are added as an experimental condition.

This chapter provides empirical evidence for the relationship between temporal embeddedness and solidarity toward co-workers based on two different datasets. The strength of the survey data is that it is possible to examine a large sample of employees within organizations and the vignette study offers the possibility to study specific conditions in more detail. Where the studies converge, accumulation of evidence takes place and where there are differences between them, new questions are raised that may not have been considered when only one dataset was used.

4.7.2 PRACTICAL IMPLICATIONS

The findings in this chapter have practical implications. A first implication has to do with what kind of behavior can be expected from temporary workers. Sometimes it is suggested that temporary employees will show less solidary types of behavior toward others due to the kind of exchange relationship they have with the organization, which is assumed to lead to minimal effort from the temporary worker. The studies presented here, do not support such a view and instead show that the kind of contract that employees have does not affect their solidarity toward co-workers. The findings of the two studies also show that managers can combine solidarity between co-workers with temporary employment contracts to deal with fluctuations in demand.

A second implication from the findings in this chapter is that solidarity between co-workers does not result from the length of the relationships between them. When it is possible to interact over a longer period solidarity between co-workers may increase. However, this is not just a matter of long-lasting relationships since the quality of the exchanges matter. The vignette study showed that employees show less solidarity toward co-workers if they have negative past experiences with them. Therefore, it is possible that there are negative effects associated with long-lasting relationships between employees. Managers should therefore not only be advised to create relationships between their subordinates that last a relatively long period to create successful teams, but to focus attention on the quality of these relationships in terms of solidarity between co-workers as well. This requires an active role from managers to monitor the level of solidarity within their teams, for instance by having meetings with individual team members or with the complete team. When they are informed about what goes on between the team members, managers have the chance to intervene before this happens and prevent things from getting worse. One such intervention could be the use of group discussions on what goes wrong in the relationship between certain people. Ultimately, managers can

intervene by transferring employees to another team. On the positive side, it also means that whenever team members manage to create solidary relationships with each other, managers should be aware of that and try to keep these positive relationships going. Managers should be careful with changing a team where solidarity is high and not be hesitant to break down relationships that lack solidarity.

4.7.3 LIMITATIONS AND FUTURE RESEARCH

The two studies give valuable insights into how solidarity toward other team members is affected by past and future encounters with them but some points can be examined in more detail and provide possibilities for future research. A first limitation of this chapter has to do with the scope of the conclusions that can be drawn from it. No difference is found between temporary and permanent employees with regard to their solidarity toward co-workers. Based on this, it could be concluded that the use of temporary contracts does not affect solidarity toward co-workers. This may be true, but to make such a statement with more certainty requires organizational level information about the changes in the overall solidarity with an organization resulting from the use of temporary contracts. Based on this information, it can be assessed whether the overall level of solidarity within an organization increases or decreases with the use of temporary employment relationships. For such an assessment, multiple measurements across time are necessary. The data generated will be valuable because more accurate conclusions can be drawn about the effects of temporary contracts on employee behavior. A second interesting road to investigate has to do with the dynamic nature of temporal embeddedness. In the two studies, temporal embeddedness was measured at one point in time by asking about what happened in the past and what is likely to happen in the future. It is possible that this is an approximation of temporal embeddedness and it would be of great theoretical interest to take into account the dynamics that underlie exchange processes in co-worker relationships. Therefore, a study with a longitudinal design – where interactions between team members are investigated for a longer time – would give more insight into these dynamics. Finally, this chapter can be extended in a third direction. The two studies focus on dyadic relationships, while solidarity is likely to be affected by the larger network of relationships as well. Future research should take influences from the larger network into account. Besides that, investigating how supervisor behavior or the overall company strategy affects the dynamics and solidarity relationships within teams could extend the analyses even further.

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5

SOLIDARITY THROUGH NETWORKS

The Effects of Task and Informal

Interdependence on Cooperation within Teams^{5.1}

5.1 INTRODUCTION

Many modern organizations are characterized by the use of teams to produce goods and services (Appelbaum & Batt, 1994; Cohen & Bailey, 1997). It is assumed that these teams enable organizations to quickly adjust to changing circumstances, which are caused by product market fluctuations and demanding costumers, for instance. Within teams, employees have a shared responsibility for the quality and the quantity of the team's output (Alderfer, 1977; Hackman, 1987; Sundstrom, DeMeuse, & Futrell, 1990; Guzzo & Dickson, 1996). Individual team members are dependent on each other to finish a common task and this requires mutual adjustment of individual actions and cooperation between individual team members (Thompson, 1967; Van de Ven, Delbecq, & Koenig, 1976). Teams perform their tasks by joining individual competences based on mutually agreed responsibilities. The formal authority structure is only present in the background and will be activated only if the team does not perform well or is faced with internal problems. The interactions are therefore primarily perceived as taking place in the horizontal relationship between the team members (Mohrman, Cohen, & Mohrman, 1995; Wittek, 1999; Flynn & Brockner, 2002). Empirical research shows that the

^{5.1} This paper is under review (Ferry Koster, Frans Stokman, Randy Hodson & Karin Sanders, 2005)

functioning of teams depends on the quality of intra-team processes such as communication, coordination, balance of member contributions, mutual support, effort, and social cohesion (Hoegl & Gemuenden, 2001). Such processes require contributions of all individual team members. Nevertheless, for each individual member not contributing is the best option if everyone else in the team is already contributing because then the individual actor can reap the benefits from teamwork without putting effort into it.

Because there is a tension between individual and team interests, solidary types of behavior within a team may be problematic (March & Simon, 1958). Solidary behavior refers to individual contributions to the common good (Hechter, 1987; Lindenberg, 1998) and is affected by the interpersonal cooperative behavior between two actors Ego (the focal actor) and Alter (the other actor). The relational structure in which individual actors are embedded may well increase their solidary behavior toward each other because they offer possibilities for learning and control^{5,2} (Raub, 1997). Temporal embeddedness refers to the common past and future that the same two actors share. Positive experiences in the past and the possibility to exercise control by sanctioning behavior in the future are found to influence interpersonal solidarity (Buskens, 2002; Buskens & Raub, 2002; Chapter 4 of this thesis). Because labor market trends such as the use of temporary employment relationships (Kalleberg, 2000) decrease the length of employment relationships, a general expectation is that employees may contribute less to their organization (Tsui, Pearce, Porter, & Hite, 1995; Tsui & Wang, 2002). However, as has been investigated in Chapter 4, temporary employment relationships do not necessarily imply low levels of temporal embeddedness and temporary employees may well be showing the same levels of solidarity toward co-workers as permanent employees do. The reason for this is that solidary behavior of employees is influenced by their relationships with other in the organization.

This chapter complements Chapter 4 by investigating the effects of network embeddedness on solidarity toward co-workers. Network embeddedness – the ties that two actors have with third parties – may also increase solidarity under certain conditions. First, network embeddedness increases the visibility of individual actions for others in the team as deviations from the group norm are less likely to be covered up by other group members. Second, network embeddedness leads to positive or negative reputation effects in the group. Thus, as will be argued in more

^{5,2} In this chapter, the term ‘control’ has two meanings: (1) ‘control of the behavior of others’ and (2) ‘statistical control’. To distinguish them from each other ‘control’ refers to control of other’s behavior and ‘statistical control’ is used to refer to the use of control variables in the regression analyses.

detail below, network embeddedness enhances learning and control possibilities. In this sense, network embeddedness can complement temporal embeddedness or can be a substitute for temporal embeddedness (Raub, 1997; Buskens & Raub, 2002). Whether network embeddedness leads to increased contributions to organizational performance strongly depends on the dominant norms in the group and on the match between task interdependencies and informal groups that emerge in the team (Sanders, Snijders, & Stokman, 1998). For employers and team leaders it is easier to manipulate task interdependencies than informal group structures. Increasing task interdependencies between team members has the additional advantage that the interdependencies are directly related to the team production. The danger of high task interdependencies is, however, that group production may become more dependent on the weakest link in the production process. Moreover, the control possibilities through task interdependencies may hinder positive informal relationships to emerge because of the resulting implicit or explicit hierarchical structure that is associated with the task interdependencies. On the other hand, when the team succeeds to establish good informal relationships at team level with norms that are linked to high contributions to productivity, relations within the team become multifunctional. They are then related to both organizational outcomes and hedonic goals, i.e. goals connected with working with people we like and with whom we can do other things outside the work environment as well (Stokman, 2005). We therefore investigate in this chapter the effects of two types of networks and their interaction on solidarity between team members: *To what extent do task interdependencies and informal network embeddedness generate solidarity toward co-workers?*

In the next section, hypotheses are formulated about the effect of task and informal interdependence on solidarity toward co-workers. Then, these hypotheses are tested on two datasets that differ in their level of analysis and data gathering methodology. Study 1 uses a dataset consisting of data that are drawn from book-length ethnographies (Hodson, 1998). The ethnographies are coded by a standardized procedure to enable statistical computations and comparisons. The data that are created through this methodology are examined at the team level. Study 2 uses a dataset that is gathered at the employee-level. In both studies, the same hypotheses are tested. In the final section of this chapter, the outcomes of the two studies and their implications are discussed.

5.2 NETWORKS AND SOLIDARITY TOWARD CO-WORKERS

Solidarity between two actors Ego and Alter can be problematic because it is possible that one of them takes advantage of the other's solidarity. For example, if Alter asks Ego for assistance, there are no guarantees that Alter will be solidary toward Ego on a later occasion. Because Alter can exploit Ego's goodwill, Ego will be hesitant to offer assistance. If Ego is more secure about the good intentions of Alter, Ego may be willing to show solidarity toward Alter. Therefore, the level of solidarity that Ego shows toward Alter may be higher if Ego has more possibilities to make sure that Alter behaves solidary as well (Coleman, 1990; Buskens, 2002). Employees can show solidarity toward their co-workers and toward their supervisors. It is necessary to distinguish horizontal from vertical solidarity because employees do not necessarily behave solidary to co-workers and to supervisors at the same time and to the same extent (Chapter 3 of this thesis). For instance, empirical studies show that strong solidarity between co-workers can lead to a decrease of solidarity toward the organization (Flache, 1996). In this chapter, we focus on solidarity toward co-workers.

Network embeddedness is assumed to be important in the creation and maintenance of solidary relationships because it can facilitate learning and control (Granovetter, 1985; Raub, 1997; Buskens, 2002; Buskens & Raub, 2002). Ego can learn about Alter when they are connected to mutual acquaintances. Ego has the possibility to acquire more information about Alter when their relationship is part of a larger network of relationships. Through mutual ties in a network, Ego has more information about the trustworthiness of Alter. When Ego and Alter are in a relationship with mutual acquaintances, Ego also has more possibilities to control Alter's behavior than when their relationship is isolated. If Alter is not willing to assist Ego, Ego may choose to inform a third party about the behavior of Alter. By doing so, Ego may harm the reputation of Alter. As a result, Alter will have an incentive to be solidary toward Ego if their relationship is embedded in a larger network. If individual team members are dependent upon others in the team – for instance, when team membership involves benefits that cannot be obtained outside the group – their solidarity toward the group may be higher because individuals who do not contribute are sanctioned and those that do will be rewarded. Therefore, groups have the ability to control the behavior of their individual members (Hechter, 1987).

Learning and control are two distinct mechanisms that can both support solidarity. In this study, however, it is not possible to disentangle the two

mechanisms. Thus, no conclusions can be drawn as to which one of the two mechanisms accounts for the solidarity toward co-workers. We can therefore exclusively test how network embeddedness in general affects solidarity toward co-workers, without being able to distinguish between network effects that operate through learning and those that operate through control.

5.3 INTERDEPENDENCE IN TEAMS

Earlier research has paid more attention to network structure than to the content of the networks (see for example Burt, 1992). Moreover, studies that do investigate the content of network ties tend to focus on the effects of a single type of network. Much less research has focused on the relations between networks that differ in content and how they affect the behavior of actors (Stokman, 2005). Individual employees will be interdependent with their team if the team offers resources that they value and if they are able to jointly realize goals that they cannot realize in isolation. Within a team, individuals can direct their behavior at the attainment of organizational goals or private goals. Managers will try to make sure that employees direct their activities toward the organization by creating task interdependence between them^{5.3}. Task interdependence concerns the job descriptions of employees and is dependent upon the person's formal position in the organization (Podolny & Baron, 1997). Besides the tasks they have to perform according to their formal contract, employees are involved in activities that are not necessarily work-related, for instance to attain social resources, such as social and emotional support (Fombrun, 1982; Bozionelos, 2003). The relationships that are related to this type of interdependence are informal and characterized by person-to-person contact and are therefore referred to as informal interdependence (Podolny & Baron, 1997).

Both task and informal interdependence are assumed to generate group norms concerning how to behave, making it necessary to decompose these relationships (Stokman, 2005). How this may influence solidarity toward co-workers is investigated. To start with, the direct effects of both kinds of interdependence are considered. Within teams, however, task and informal interdependence are likely to be present at the same time. This reflects the multi-functionality of relationships between actors, referring to the situation in which they can share more than one type of tie (Katz, Lazer, Arrow, & Contractor, 2004). Therefore, in addition to the direct

^{5.3} Task interdependence means that "each member must take action for other member to do part of their work" (Wagner, 1995: 146) and differs from outcome interdependence is defined as: "the degree to which the significant outcomes an individual receives depend on the performance of others" (Wagner, 1995: 147). The effects of outcome interdependence are not investigated in this chapter.

effects of task and informal interdependence, we investigate what their mutual effect on solidarity toward co-workers is.

5.3.1 POSITION TO POSITION: TASK INTERDEPENDENCE

Task interdependence results from the type of group task and the technology used to complete the task (Thompson, 1967; Shea & Guzzo, 1987). Within teams, employees are task interdependent if the individual group members rely on one another for information, materials, and support to be able to complete their jobs (Van de Ven, Delbecq & Koenig, 1976; Brass, 1981; Van der Vegt, Emans, & Van de Vliert, 2001). When their tasks are interdependent, the output of one employee is an essential input for the tasks of other employees. Therefore, it requires interaction between employees (Campion, Medsker, & Higgs, 1993), and increases the demand for communication, cooperation, and coordination of effort (Thibaut & Kelley, 1959; Salancik & Pfeffer, 1977; Saavedra, Early, & Van Dyne, 1993). Because task interdependence requires employees to work together, individual actors tend to engage in types of behavior, such as seeking and providing help (Wagner, 1995; Allen, Sargent, & Bradley, 2003). Actors realize that they cannot accomplish their individual goals without the assistance and help of others or through sharing resources. By means of these highly interdependent tasks, a close alignment between an individual's goal and those of the team is created. Moreover, the individual team members may believe that the success of the team depends on every individual's effort (Ramamoorthy & Flood, 2004). Studies have provided evidence that task interdependence among employees is positively related to cooperation, helping, job satisfaction, and quality of the group process (Wageman, 1995; Wageman & Baker, 1997; Allen, Sargent, & Bradley, 2003).

It is assumed that task interdependence between team members increases their interest in assuring that everyone contributes to the common task. Especially since the task performance of one member depends on the output of the others, there will be an increasing need to make sure that others do their job well. Consequently, the individual team members will monitor and control each other's behavior closely (Baron & Kreps, 1999). Mutual monitoring concerns the reciprocal assessment of performance among individuals working on common tasks and places control in the hands of peers (Welbourne, Balkin, & Gomez-Meija, 1995). Through mutual monitoring, information is gathered that is used in the control process (Fama & Jensen, 1983). When team members monitor each other, it becomes clear who is contributing and who is not and peers can sanction each other to make sure that everyone contributes to the team task (Kandel & Lazear, 1992). Therefore, task interdependence may result in norms about how employees should behave and how

they should be rewarded if they behave solidary and how they should be punished for non-solidary behavior. This leads to the following hypothesis about the effects of task interdependence on solidarity toward co-workers:

Task Interdependence Hypothesis (Hypothesis 5.1):

Task interdependence is positively related to solidarity toward co-workers.

5.3.2 PERSON TO PERSON: INFORMAL INTERDEPENDENCE

Informal interdependence refers to the personal relationships between team members and that are independent from the formal positions they have. Through personal ties that contain affect and trust, employees may realize goals that are not necessarily related to completing a task. Examples of activities that comprise these kinds of goals are drinking coffee, talking about personal matters, and creating a pleasant atmosphere. Within teams, these relationships can provide employees access to social resources such as social support and friendships (Podolny & Baron, 1997). Therefore, individual employees are informally interdependent when the team can offer these resources. Informal interdependence is based on personal attraction between employees and may result in social cohesion and trust within a team (Brawley, Carron, & Widmeyer, 1987; Zaccaro, 1991; Mullen & Copper, 1994; Hoegl & Gemuenden, 2001). Trust relationships can affect the behavior of team members and are related to a variety of outcomes, such as informal cooperation between actors (Blau, 1964; Zucker, 1986; Coleman, 1988; Powell, 1990; Ring & Van de Ven, 1994; Creed & Miles, 1996; Whitener, Brodt, Korsgaard, & Werner, 1998), information sharing (Brass, 1984; Borgatti & Cross, 2003), knowledge transfer (Reagans & McEvily, 2003), work accomplishment, and the provision of social support (Mehra, Kilduff, & Brass, 1998; Sandefur & Laumann, 1998; Adler & Kwon, 2002).

Hence, even though the principal aim of informal relationships is not directly work-related, they may affect work behavior. Whereas task interdependence relationships can increase solidarity within a team through mutual monitoring, so does informal interdependence through the creation of social incentives and trust. When individual team members are dependent on others in the team to get access to social resources, they may be willing to provide solidary behavior in return. These considerations lead to the following hypothesis about the relationship between informal interdependence and solidarity toward co-workers:

Informal Interdependence Hypothesis (Hypothesis 5.2):

Informal interdependence is positively related to solidarity toward co-workers.

5.3.3 TASK INTERDEPENDENCE AND INFORMAL INTERDEPENDENCE

In the previous sections, it was hypothesized that solidarity toward co-workers is affected by task interdependence through monitoring and by informal interdependence through social incentives. In addition, it is argued that these different interdependencies may lead to norms about appropriate behavior. Since task interdependence refers to task-related ties between team members, mutual monitoring may be required to make sure that all individuals work toward the team's goal. Informal networks, consisting of personal ties between team members, may result in trust relations that make solidarity possible. Though the two forms of interdependence can be distinguished from each other analytically, they will be present at the same time in many teams. Employees tend to develop informal ties with co-workers with whom they are formally interdependent. Employees that are highly task interdependent will meet co-workers on a regular basis for work-related matters. When the co-workers like each other, they may develop informal relationships as well (Krackhardt & Hanson, 1993; Hinds, Carley, Krackhardt, & Wholey, 1999). This leads to the situation in which formally interdependent employees are also informally interdependent. Flache (2002; 2003) identifies two opposing mechanisms that have been studied in this respect: the social control mechanism and the social dependence mechanism. These mechanisms lead to contrasting hypotheses about the mutual effect of task and informal interdependence on solidarity toward co-workers.

SOCIAL CONTROL MECHANISM

According to the social control mechanism, the presence of task interdependence and informal interdependence in a team will increase the solidarity of team members. There are two main arguments for this. The first argument focuses on what will happen to solidarity in the absence of both kinds of interdependence. When there is no interdependence at all in the team, there will be less solidarity within the team, because of the lack of monitoring and trust. Along the same line of reasoning, the level of solidarity toward co-workers will be low when there is no interdependence between co-workers. The second argument focuses on what might happen if both kinds of interdependence are present within a team and states that control of non-cooperating team members is easier if there is a combination of task interdependence and informal interdependence (Homans, 1974; Coleman, 1990). Within this line of research, it is stated that task interdependence requires a certain

level of trust between the interdependent actors to function well (McKnight, Cummings, & Chervany, 1998), that task interdependence in teams may result in investments in social capital, creating informal interdependence between team members (Leana & Van Buren, 1999), and that task interdependence can create trust over time and result in an increased willingness to help each other and go beyond the prescribed job duties (Ramamoorthy & Flood, 2004). Therefore, it is expected that teams whose members are both formally and informally embedded show higher levels of cooperation (Balkundi & Harrison, 2004). According to this argument, within teams with a high level of task interdependence, informal interdependence may flourish, resulting in good working relations and high levels of mutual solidarity. The two lines of reasoning lead to the following hypothesis:

Compensation Hypothesis (Hypothesis 5.3a):

Informal interdependence positively moderates the relationship between task interdependence and solidarity toward co-workers.

SOCIAL DEPENDENCE MECHANISM

The social dependence mechanism offers a contrasting view on the effects of interdependence on solidarity toward co-workers. It argues that the presence of both task and informal interdependence within a team can have negative effects (Flache, 2002; 2003). The reason for this is that the different types of interdependence may require conflicting types of behavior from team members. Task interdependence emphasizes control through mutual monitoring behavior in a team. Task interdependence provides a formal basis for control in teams in that employees are in a situation in which they punish non-cooperators and reward cooperators. Informal interdependence, however, may be characterized by the absence of monitoring and control in the team, especially when the informal relationships are based on mutual trust. In a team where trust is high, team members may be reluctant to monitor each other. If a team member has a good relationship with other team members but at the same time tries to monitor them, a conflict may occur. Therefore, individual members may not be willing to monitor people with whom they have good relationships (Langfred, 2004). Moreover, the other people in the team may consider monitoring as a violation of their trust, which may create group pressures not to monitor each other (Lewicki & Bunker, 1996). The presence of both sanctions and rewards may decrease the solidarity within teams (Orr, 2001).

This mechanism focuses on how the two kinds of interdependence may affect each other negatively. It argues that monitoring and trust may be in conflict with

each other. Several researchers have studied monitoring behavior within teams (Cohen & Bailey, 1997). Some of these studies show that employees can experience teamwork mainly as a form of control (Gryzb, 1984). For instance, teams tend to use their power to demand norm compliance from all members (Sinclair, 1992) and the creation of norms that result in extreme control over individual team members (Barker, 1993). Within teams in which individual members are engaged mainly in monitoring each other, it may be hard to create and maintain trust relationships. As informal interdependence is based on mutual trust, it may be in conflict with formal control in teams. Based on these considerations, the following hypothesis is formulated:

Conflicting Norms Hypothesis (Hypothesis 5.3b):

Informal interdependence negatively moderates the relationship between task interdependence and solidarity toward co-workers.

5.4 DATA ANALYSIS

Two datasets are used to test the hypotheses. They are examined in two separate studies that differ with respect to their data gathering method and level of analysis. The first set contains data at the team level and is gathered by coding existing ethnographic data (Hodson, 1998). The second dataset is a survey at the employee level across ten organizations.

Using different datasets to test the same hypotheses is a form of triangulation (Denzin, 1978). Since every research strategy has its limits, combining information from different data methods can be a useful way to deal with these flaws in research methods (Denzin, 1978; Scandura & Williams, 2000). Thus, using more than one method increases the validity of the findings. If the findings converge, there is more reason to believe that the results are valid (Campbell & Fiske, 1959). Comparisons of the outcomes across methods are a vehicle of cross-validation and if they result in similar conclusions, there is more certainty about the robustness of the findings (Jick, 1979). A weakness of the ethnographic data is that the variables have to be at a general level to enable comparisons across teams. The survey data are at a more detailed level and therefore overcome this weakness. The strong point of the ethnographies compared to the survey is that they contain information across a larger sample of teams in a variety of organizations.

5.5 STUDY 1: WORKPLACE ETHNOGRAPHIES

5.5.1 LEVEL OF ANALYSIS

The data are at the team level and provide general information about characteristics of the team such as mutual solidarity and levels of interdependence. They are based on the systematic compilation and analysis of data gathered from book-length organizational ethnographies (n = 204) containing in-depth observation of workplaces and workplace. The ethnographies constitute the population of published book-length English-language ethnographies that focus on an identifiable work group in a single organization and that provide relatively complete information on the organization, the nature of the work taking place there, and employees' behavior at work. The industrial and occupation locus of the cases and the sizes of the enterprises studied are reported in Table 5.1. The largest number of cases is in durable manufacturing (17.3%) with additional concentrations in professional services, non-durable manufacturing, and wholesale and retail trade. The modal occupation is assembly work with additional concentrations in the professional and service work. The enterprises range from quite small (under 50 employees) to quite large (over 5,000 employees). The average size of the team is 3.29 (s.d = 1.32).

TABLE 5.1
Industrial and occupational locus (workplace ethnography data)

Industry	%	Occupation	%	Employment size	%
Extractive and construction	5.9	Professional	20.8	< 50	22.3
Non-durable manufacturing	14.9	Managerial	7.9	50 to 99	9.1
Durable manufacturing	17.3	Clerical	5.9	100 to 499	20.7
Transportation equipment	8.4	Sales	3.5	500 to 999	13.9
Transportation, communication, and utilities	8.9	Skilled	9.9	1000-4999	20.7
Wholesale and retail trade	10.9	Assembly	27.7	> 5000	13.3
Fire, insurance, real estate, and business services	8.5	Labor	7.4		
Personal services	4.9	Service	14.4		
Professional and related services	16.3	Farm	2.5		
Public administration	4.0				
Total	100		100		100

n = 204.

The organizational ethnographies cover a wide range of topics, including in-depth investigations of organizational practices, management behavior, and worker behavior and experiences. The criteria for inclusion in the final pool to be coded are: (1) the use of direct ethnographic methods of observation over a period of at least six months; (2) a focus on a single organizational setting; and (3) a focus on at least one clearly identified work group, such as an assembly line, a typing pool, a task group, or some other identifiable work group.

5.5.2 PROCEDURE

A team of four researchers developed the coding instrument for the ethnographies. First, a list of relevant concepts and preliminary response categories is developed. Second, over a period of six months, eight selected ethnographies are read and coded by each of the four team members. Because not all ethnographic accounts provide information on all variables there are quite some missing values in the dataset. The available data are used, generating a dataset with 154 cases.

5.5.3 MEASURES

DEPENDENT VARIABLE

Solidarity toward co-workers consists of different types of behavior. The behavior that is used in this study is informal peer training, a kind of helping behavior among co-workers. This is measured on a five-point scale (1 = none; 5 = extensive).

INDEPENDENT VARIABLES

Task interdependence is coded 0 (no) and 1 (yes). *Informal interdependence* is coded 0 (no) and 1 (yes).

TEMPORARY EMPLOYMENT RELATIONSHIP

The investigate whether employment status – permanent versus temporary – influences the level of solidarity toward co-workers, this variable is added to the regression model. The variable *percentage temporary workers* is measured with the fraction of temporary workers in the team.

STATISTICAL CONTROL VARIABLES

Percentage women is measured with the fraction of female employees in the team. The average *educational level* of the team is indicated on a five-point scale (1 = grade school; 5 = graduate degree). The variable *median* age indicates the median age of the employees in the team.

TABLE 5.2
Means, standard deviations, and correlations (workplace ethnography data)

	Mean	s.d.	1.	2.	3.	4.	5.	6.
1. Solidarity toward co-workers	3.62	1.10						
2. Formal interdependence	.38	.49	.28**					
3. Informal interdependence	.75	.43	.29**	.11				
4. Percentage temporary workers	10.6	28.1	.08	-.07	.11			
5. Percentage females	.33	.36	-.21**	-.13 [†]	-.04	-.07		
6. Education	2.65	1.17	.11	.29**	-.20**	-.18*	-.13 [†]	
7. Age	32	6.90	.13 [†]	.10	-.05	.03	-.19**	.13 [†]

n = 154.

[†]p < .10; * p < .05; ** p < .01

5.5.4 RESULTS

Table 5.2 shows the means, standard deviations, and correlation coefficients among the variables that are used in the study of the ethnographic data. The bivariate results show that solidarity toward co-workers is positively related to task interdependence ($r = .28, p < .01$) and informal interdependence ($r = .29, p < .01$).

The hypotheses are tested using OLS regression analysis. Before carrying out the analysis, it is assessed whether the data meet the key assumptions of OLS regression (Fox, 1991). The skewness and the kurtosis of the dependent variable – solidarity toward co-workers – are examined to investigate whether it approaches a normal distribution. If the variable is normally distributed, both its skewness and kurtosis should be zero. The variable is distributed with a skewness of $-.03$ (s.e. = $.18$) and a kurtosis of $-.82$ (s.e. = $.36$). These statistics indicate that the distribution is only slightly left-skewed compared to a normal distribution. Besides that, a normal probability plot is examined visually. This plot shows that the points are symmetrically distributed around a diagonal line, indicating that the variable has a relatively normal distribution.

The regression analysis is carried out in three steps. In the first model the number of females, age, and educational level are entered. The second model studies the direct effects of task interdependence and informal interdependence. In the third step the interaction effects of task and informal interdependence are added to the model. In this final model, that includes the main effects and the interaction effect, it is likely that there are high correlations between the independent variables. To reduce multicollinearity, the variables are centered (Aiken & West, 1991). The results of the regression analysis are presented in Table 5.3.

TABLE 5.3
Results of regression analysis of informal peer training
(workplace ethnography data)

	Hypothesis	(1)	(2)	(3)
NETWORK EMBEDDEDNESS				
Task interdependence	+		.23** (2.97)	.22** (2.82)
Informal interdependence	+		.30** (3.97)	.31** (4.11)
Task * Informal interdependence	+/- ^a			.09 (1.24)
PERCENTAGE TEMPORARY WORKERS				
		.08 (.93)	.07 (.93)	.07 (.94)
STATISTICAL CONTROLS				
Percentage females		-.20* (2.48)	-.18* (2.44)	-.18* (2.44)
Age		.07 (.84)	.07 (.86)	.07 (.92)
Educational level		.09 (1.14)	.11 (1.36)	.11 (1.44)
Adjusted R ²		.05	.20	.20
R ² change		.07	.16	.01

n = 154. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

^a The 'compensation hypothesis' predicts a positive effect; the 'conflicting norms hypothesis' predicts a negative effect.

[†] p < .10; * p < .05; ** p < .01

According to Table 5.3, the only control variable that affects solidarity toward co-workers is the number of females that is employed in the workgroup. If there are more women in the team, the level of solidarity tends to be slightly lower. The explained variance of the first model is low (5 percent). The explained variance of the model 2 is highly increased (20 percent). Task interdependence turns out to be significantly related to solidarity toward co-workers ($b = .23, p < .01$). This finding supports hypothesis 5.1. Hypothesis 5.2 is also supported, there is a positive effect of informal interdependence on solidarity toward co-workers ($b = .30, p < .01$). Model 3 investigates the effect of the interaction between task and informal interdependence on solidarity toward co-workers, which turns out to be low and not significant. The analyses do not support the hypothesis 5.3a and hypothesis 5.3b.

5.6 STUDY 2: SURVEY

5.6.1 RESPONDENTS

Respondents are recruited from ten organizations. The dataset includes employees from a ministerial organization, a nursing home, a university support unit, an engineering organization, an art foundation, a consultancy firm, a housing foundation, a recreation center, a municipality, and a governmental organization. In total, the dataset consists of 736 employees. The organizations are from different sectors and vary in size as is presented in Table 5.4.

TABLE 5.4
Descriptive statistics of the organizations
(survey data)

	Number of respondents	Percentage temporary workers	Percentage women	Mean educational level
Ministry	266	9	33	6.1
Nursing home	98	11	93	4.7
Supportive staff university	11	18	0	5.6
Engineering firm	17	18	6	4.7
Art foundation	17	6	65	6.4
Consultancy firm	15	20	53	6.9
Housing foundation	14	7	36	4.9
Recreation center	16	94	73	4.6
Municipality	122	8	39	5.0
Governmental organization	160	19	45	5.8
Total	736	14	45	5.6

Overall, 14 percent of the respondents in the dataset have a temporary contract. In the art foundation, the lowest number of respondents is employed temporarily (6 percent), the recreation center is at the other end of the extreme with 94 percent temporary workers. The nursing home employs the most female workers (93 percent), while at the supportive staff of the university no female workers are employed. The mean educational level of the employees – measured on a scale ranging from 1 (no education completed) to 9 (Ph.D. level completed) – is 5.6. The employees of the consultancy firms have the highest educational level (mean = 6.9) and the recreation center employs the least educated workers (mean = 4.6).

5.6.2 PROCEDURE

Questionnaires are developed to gather data from employees (for an overview of the complete questionnaire see Lambooi, Sanders, Koster, Emmerik, Raub, Flache, & Wittek, 2003). In each of the organizations, a student was present during this period to collect the data. The aim of this data collection procedure is to increase the response rate. Another advantage is that the students could respond to employees' questions and complaints regarding the questionnaire or the research in general. By using this procedure, respondents are better informed about the aim of the research, which may increase their willingness to participate in the survey.

5.6.3 MEASURES

DEPENDENT VARIABLE

The items measuring *solidarity toward co-workers* are based on Lindenberg (1998). Solidarity refers to consistent cooperative behavior across the following five social dilemma situations, applied to behavior in organizations (Sanders, Schyns, Koster & Rotteveel, 2003; Sanders, 2004; Koster & Sanders, 2004): common good situation, sharing situation, need situation, breach temptation, and mishap situation (Lindenberg, 1998). The five items to measure solidarity toward co-workers are: (1) "I help my co-workers to finish tasks"; (2) "I am willing to help my co-workers when things go wrong unexpectedly"; (3) "I apologize to my co-workers when I have made a mistake"; (4) "I try to divide the pleasant and unpleasant tasks equally between myself and my co-workers"; and (5) "I live up to agreements with my co-workers" (Cronbach's Alpha = .84).

INDEPENDENT VARIABLES

Task interdependence refers to position-to-position relationships with others. A three item scale is used to measure the task interdependence of the respondents. The items are: (1) "I need information from my co-workers to be able to carry out my job."; (2) "I am very dependent on my co-workers to be able to carry out my job", and (3) "I have to work closely together with my co-workers to be able to carry out my job." These items are measured on a 7-point scale (1 = not at all; 7 = to a large extent). The three items form a reliable scale (Cronbach's Alpha = .77). *Informal interdependence* refers to the informal or person-to-person relationships that employees have with co-workers. A scale containing three items is constructed. The items are: (1) "With how many people in the team do you discuss personal matters?"; (2) "With what part of the team do you have a good personal

relationship?"; and (3) "What percentage of all the people in the organization with whom you have a good relationship is also part of your team?". The items are measured on a 7-point scale (1 = none; 7 = all). The reliability of the scale has a Cronbach's Alpha of .72.

TEMPORARY EMPLOYMENT RELATIONSHIP

The investigate whether employment status – permanent versus temporary – influences the level of solidarity toward co-workers, this variable is added to the regression model. *Temporary employment relationships* include those arrangements where there is no implicit or explicit contract for long-term employment (Polivka & Nardone, 1989). The respondents are given three options to indicate their employment status: (1) permanent contract; (2) temporary contract with an implicit or explicit agreement that they can stay after the contract ends; and (3) temporary contract without an implicit or explicit agreement to continue the employment relationships. Since option 3 included temporary workers according to the definition, this category is recoded into 1 and the other categories are recoded into 0.

STATISTICAL CONTROL VARIABLES

Gender is coded 0 (male) and 1 (female). *Educational level* is measured by asking the highest level of education that the respondent completed. This variable is measured on a scale from 1 (no education) to 9 (Ph.D. level). Respondents are asked to fill in their year of birth. This variable is recoded into the *age* of the respondents. The effect of *organizational level* variables on individual behaviors can be examined using multilevel regression analysis (Bryk & Raudenbush, 1992). However, this chapter focuses on variables at the individual level and no hypotheses are formulated about which organizational factors may influence this behavior. Therefore, if membership of a particular organization influences the results is examined by adding dummy variables for each organization.

TABLE 5.5
Means, standard deviations, and correlations (survey data)

	Mean	s.d	1.	2.	3.	4.	5.	6.
1. Solidarity toward co-workers	5.94	.68	.84					
2. Task interdependence	4.99	1.64	.24**	.77				
3. Informal interdependence	5.32	1.04	.29**	.18**	.72			
4. Temporary employment relationship	.05	.21	-.01	-.02	.02			
5. Gender (1 = female)	.45	.40	.14**	-.07	-.04	-.03		
6. Education	5.76	1.69	-.14**	-.05	-.02	.03	-.07*	
7. Age	38	32	-.03	.12**	-.01	.03	-.02	-.09*

n = 703. Cronbach's Alphas are on the diagonal.

† p < .10; * p < .05; ** p < .01

5.6.4 RESULTS

The correlation coefficients in Table 5.5 reveal that solidarity toward co-workers is related to most of the variables in the study, except for the type of contract and the age of the respondent. Solidarity toward co-workers is positively related to task interdependence ($r = .24, p < .01$) and informal interdependence ($r = .29, p < .01$).

Not all respondents answered all of the questions relevant in this study. 33 Respondents did not provide enough information on their interdependence with the team and are therefore excluded from the analysis. This means that the analyses are conducted on a dataset containing 703 respondents. Ordinary Least Squares (OLS) regression is used to test the hypotheses. The dependent variable is distributed with a skewness of $-.48$ (s.e. = $.09$) and a kurtosis of $.29$ (s.e. = $.18$). These statistics indicate that the distribution is only slightly left-skewed compared to a normal distribution. The normal probability plot shows that the points are symmetrically distributed around a diagonal line, indicating that the variable has a relatively normal distribution.

The analyses are conducted in three steps. The first model includes the control variables, in the second model, the main effects of task interdependence and informal interdependence are added and the third model also includes the interaction effect between task and informal interdependence. The final model, that includes the main effect terms and the interaction effect, is likely to show high correlations between the independent variables. To reduce multicollinearity, the variables are centered (Aiken & West, 1991). The results of the regression analysis are shown in Table 5.6.

TABLE 5.6
Results of regression analysis solidarity toward co-workers
(survey data)

	Hypothesis	(1)	(2)	(3)
NETWORK EMBEDDEDNESS				
Task interdependence	+		.20** (5.64)	.20** (5.55)
Informal interdependence	+		.30** (8.48)	.30** (8.41)
Task * Informal interdependence	+/- ^a			-.08* (2.13)
TEMPORARY EMPLOYMENT RELATIONSHIP				
		-.02 (.44)	-.03 (.80)	-.03 (.87)
STATISTICAL CONTROLS				
Gender (1=female)		.14** (3.31)	.15** (4.01)	.15** (3.88)
Age		.03 (.82)	.04 (1.24)	.04 (1.12)
Educational level		-.15** (3.66)	-.14** (3.59)	-.14** (3.79)
Organization dummies				
Ministry		-.12 (.82)	-.11 (.85)	-.14 (1.08)
Nursing home		-.12 (1.16)	-.08 (.91)	-.11 (1.16)
Supportive staff university		-.02 (.45)	.01 (.21)	.00 (.09)
Engineering organization		-.06 (.97)	-.07 (1.39)	-.08 (1.57)
Art foundation		-.01 (.19)	-.02 (.28)	-.03 (.51)
Consultancy firm		-.10 [†] (1.88)	-.12* (2.31)	-.13* (2.51)
Housing foundation		-.06 (1.16)	-.08 (1.60)	-.09 [†] (1.78)
Governmental organization		-.15 (1.32)	-.17 [†] (1.66)	-.19 [†] (1.83)
Municipality		-.09 (.79)	-.06 (.52)	-.08 (.75)
Recreation center (reference category)		---	---	---
Adjusted R ²		.03	.18	.18
R ² change		.05	.14	.01

n = 703. Standardized regression coefficients are reported; absolute value of t-statistics in parentheses.

^a The 'compensation hypothesis' predicts a positive effect; the 'conflicting norms hypothesis' predicts a negative effect.

[†] p < .10; * p < .05; ** p < .01

According to Table 5.6, women are more solidary toward co-workers than men and employees with a high education show less solidarity toward their co-workers. However, the explained variance of the first model is low (3 percent). In model 2, adding the main effects, increases the explained variance (18 percent). Task interdependence has a positive effect on solidarity toward co-workers ($b = .20, p < .01$). This finding supports hypothesis 5.1. Informal interdependence also has a positive effect on solidarity toward co-workers ($b = .30, p < .01$), providing support for hypothesis 5.2. Model 3 includes the interaction effect between task and informal interdependence. The explained variance slightly increases. The interaction effect is negative ($b = -.08, p < .05$), thus supporting hypothesis 5.3b and rejecting hypothesis 5.3a. The interaction effect of task interdependence and informal interdependence on solidarity toward co-workers is presented in Figure 5.1.

FIGURE 5.1
Interaction effect of task interdependence and informal interdependence on solidarity toward co-workers (survey data)

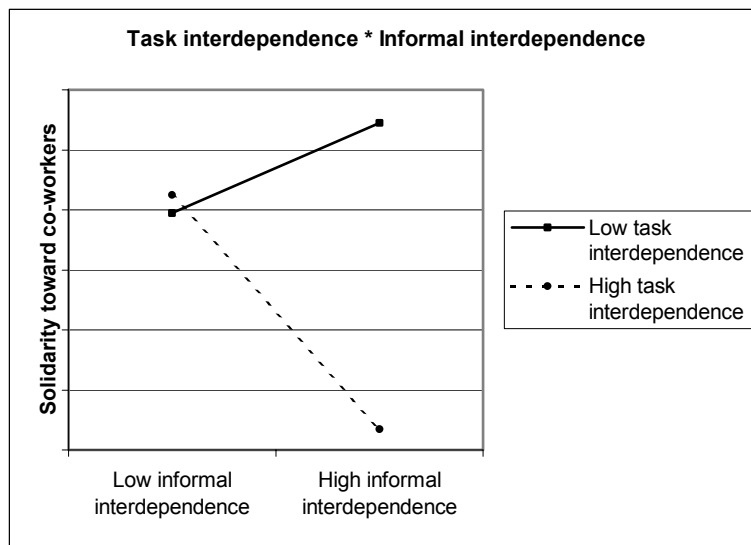


Figure 5.1 shows that task and informal interdependence should not be combined. High informal interdependence increases solidary behavior between co-workers with low task interdependence. However, under conditions of high informal interdependence, co-workers with high task interdependences show less solidary behavior than co-workers with low task interdependence.

5.7 SUMMARY OF THE FINDINGS

This chapter investigates how solidarity toward co-workers is affected by the network embeddedness of employees. By using two datasets that differ with regard to the level of analysis and data gathering methodology, it tries to give a balanced insight into these embeddedness effects. The hypotheses and findings are summarized in Table 5.7.

TABLE 5.7
Overview of hypotheses and results

		Study 1: Workplace ethnography data	Study 2: Survey data
Task interdependence	+	Supported	Supported
Informal interdependence	+	Supported	Supported
Compensation effect	+	Not supported	Rejected
Conflicting norms	-	Not supported	Supported

The most important finding is that task interdependence and informal interdependence are both related to higher levels of solidarity toward co-workers. Teams can offer instrumental and social resources that are valued by the individual team members. The effect of informal interdependence turns out to be stronger than the effect of task interdependence. The combined effect of task and informal interdependence does not yield an interaction effect in the study using the ethnographic data. In the survey data, a negative interaction occurred between task and informal interdependence.

5.8 DISCUSSION AND CONCLUSIONS

5.8.1 THEORETICAL IMPLICATIONS

The two studies show that task and informal interdependence positively affect solidarity toward co-workers. Solidarity results from effective mutual control within teams that try to make sure that everyone contributes to the team task. Team members may also show solidarity toward each other, because they are informally interdependent and trust the others in the team. Through the two forms of interdependence, team members try to accomplish different goals in exchange for instrumental and social resources. This finding offers a contribution to research studying the team-employee exchange relationship (Cole, Schaninger, & Harris, 2002). So far, the development in this field was mainly theoretical and did not yield many empirical studies. The finding that different networks have different and substantial combined effects on behavior of members can be used in this field to generate new research questions about exchanges between individuals and teams (Stokman, 2005).

The results of the workplace ethnographies and the survey data differ with respect to the interaction effect between task and informal interdependence on solidarity toward co-workers. A possible explanation why the findings from the two studies did not converge is that the data are gathered at different levels of analysis. The negative interaction effect is present at the individual level but not at the team level. Therefore, it may be the case that individuals experience a conflict of norms when they are both task and informally interdependent with others within the team. The workplace ethnography data showed that within teams, task and informal interdependence are present. Nevertheless, this does not necessarily lead to a conflict situation for individuals. One subgroup of employees within the team may be task interdependent and another group may be informally interdependent, without creating a conflict between monitoring and trust for individual team members.

The finding that two different kinds of network embeddedness influence solidarity toward co-workers implies that taking the content of network ties into consideration may explain why teams differ in their mutual solidarity. The source of this solidarity may lie in either formal networks, like the one studied here based on task interdependencies, or the informal network. This finding also leads to the conclusion that researchers, who are studying solidary types of behavior in teams, should consider the combined effects of formal and informal networks. The negative interaction between task and informal interdependence that was confirmed by the survey data shows the importance of the presence of informal relations in task dependent teams. This finding implies that the combination of high task

interdependence with high informal interdependence may have unanticipated negative effects on the behavior of employees. Based on this finding it can be concluded that studies focusing on matters like informal team cohesiveness should take the formal structure of the team into consideration. In addition, when the effects of task design on team member behavior are studied, looking at the informal interdependence with the team may increase the understanding of these effects. Therefore, this finding is important for organizational design theories, such as socio-technical systems (Trist & Bamforth, 1951; Cherns, 1976) and Total Quality Management (Lawler, Mohrman, & Ledford, 1992; Powell, 1995). These theories tend to focus solely on task design and are based on the assumption that when tasks are designed properly, people will behave accordingly. Social interactions usually do not play a role in these theories. These task design theories may gain by including task and informal interdependence in their models.

Finally, there is a difference between the ethnographic data and the survey data. In the ethnographic data, there is a negative effect of women in the team on solidarity and in the survey data females show more solidarity than men do. It should be noted that these findings are not necessarily in conflict with each other. The ethnographic data are at the team level and what is found is a relationship at this level between the percentage of women and the level of peer training. Based on this finding, it is not possible to conclude that women show less solidarity than men do. It only means that when there are more women, the level of solidarity toward co-workers is lower but it is unknown whether the men or women in the team show less solidarity. In contrast, the survey data do not include the gender of the others in the team but focus on the behavior of the individual actor toward co-workers. According to the survey, women show more solidarity toward co-workers than men do. The interpretation of these two findings is that women that are working in a team with many men will be more solidary toward co-workers than women that work in a team with many other women. This interpretation is in line with research studying networks of men and women. In a recent study, it was found that men and women differ with respect to their networks. If women try to get a better position, they are less solidary toward their female co-workers, while this is not the case for networks of males (Van der Hulst, 2004). Therefore, a woman working in a male environment may show more solidarity than a woman in a female environment. However, with the available data it was not possible to test this interpretation.

5.8.2 PRACTICAL IMPLICATIONS

The practical implications of this study are the following. For a manager it may be difficult to create informal interdependence between co-workers, especially when there are no long-term relationships between them. Therefore, managers can use task interdependence to support solidarity from employees toward co-workers.

Managers, however, should be aware of possible negative effects of using task interdependence. The negative interaction between task and informal interdependence means that informal relations should be nurtured. When they are managing teams in which employees are informally interdependent with each other, they may choose to lower the level of task interdependence within the team. By doing so, the chances are lower that negative effects on solidarity toward co-workers will occur. In contexts where task interdependencies are high and cannot be reduced, the negative interaction between task and informal interdependence can lead to a policy of circulating employees regularly between teams to prevent the development of strong informal interdependencies within teams.

5.8.3 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

In this study, the focus was on the content of the ties that employees have with other team members. This approach yielded insight into how different kinds of interdependence influence solidarity between actors. Moreover, it increased our knowledge of what the effects may be of the interplay between the two types of interdependence. This is one of the benefits of the studies presented in this chapter. It also leads to some suggestions for future research.

First, task and informal interdependence refer to the relationship between individuals and teams. The ethnographic data consists of information about the whole team, but do not include the variation within the teams. The survey data, on the other hand, are at the individual level and do not include information at the team level. By combining the evidence from both datasets, they converge into similar findings. Future research should more explicitly focus on the combination of team characteristics with variables at the individual level to generate more insight onto the relationship between the individual and the team.

Another limitation of the studies that are presented in this chapter is that they focus solely on intra-team relationships and how these relationships affect solitary types of behavior. It therefore does not deal with the fact that team solidarity may also result from relations that teams have with other teams. The nature of these relationships may also be an important factor influencing intra-team solidarity. Given that interdependence within organizations is not only increasing within teams, but that there is also increasing interdependence between teams, studying these

effects may lead to better understanding of the effects of relationships with other teams on intra-team solidarity.

Finally, there were no data available on the structure of the network. The argument in this chapter is that two forms of interdependence influence solidary behavior. By studying different types of networks in combination with their structure the understanding of the effects of networks on solidarity may be increased further because then it is possible to study if a certain type of tie in combination with a certain network structure increases team solidarity. Such studies can investigate the effects of learning and controlling through network embeddedness. By combining network content and structure in future studies, it will be possible to gain more knowledge about the influence that formal and informal networks have on solidary behavior in teams. In addition to the inclusion of structural features, future studies should include performance measures to investigate networks that differ in structure and content. Ideally, such a study would combine performance measures at different levels – individuals, teams, and organizations – to gain knowledge about the effects of interdependence on solidarity and performance.

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6

CONCLUSION

6.1 INTRODUCTION

In this thesis it is investigated whether there is a tension between solidary behavior of employees and temporary employment relationships within modern organizations. Many modern organizations operate in changing environments and try to adapt to these changes (Cohen & Bailey, 1997; Sanders, 2000; Sanders, Van Emmerik, & Raub, 2002). Because organizations are less effective in changing environments, employers replace hierarchical organization structures with flatter, team-based organizational structures. Teams are responsible for the completion of their task, requiring contributions from all individual team members; employees are dependent on each other to reach team goals. Assistance on the job and taking over tasks are assumed important within team structures. The problem with teamwork is that the assessment of individual contributions may be hard (Ouchi, 1980; Williamson, 1981). Individual team members may choose to lessen their contributions and let others do the work but still try to benefit from the team reward. In other words, team structures may require solidary types of behaviors from individuals while at the same time it is possible that teams create incentives for individual team-members to show no solidarity toward co-workers.

Solidary behavior refers to individual contributions to the common good (Hechter, 1987; Lindenberg, 1998). Such contributions are affected by the level interpersonal cooperative behavior between two actors, Ego (the focal actor) and Alter (the other actor), and can be subdivided in vertical and horizontal solidarity between Ego and Alter. When Ego is the employee and Alter is the supervisor, we speak of vertical solidarity and when Ego is the employee and Alter is a co-worker,

the term horizontal solidarity is used. For Ego, there are costs associated with showing solidarity toward Alter, because Alter can take advantage of Ego's solidarity. Therefore, solidarity between Ego and Alter does not arise automatically and mechanisms are needed to develop and maintain solidarity within a team.

Modern organizations also demand flexibility from their employees. Among other forms, temporary employment relationships are a kind of flexibility used by many organizations. It can be argued that the temporal and networks embeddedness of employees with a temporary employment contract is lower than that of permanent workers. The relationships they have, have a shorter time-span than those of permanent workers. In addition, they have fewer possibilities to build up a network of relationships with other employees within the organization. Moreover, a temporary worker may have to deal with a group of permanent employees who have strong relationships with each other. For a newcomer, it will be very hard to become part of such a network of relationships.

If employers try to use temporary employment relationships and at the same time demand solidary types of behavior from their employees, the question may be posed under what conditions temporary employment relationships undermine solidary types of behavior from employees and under which conditions this does not occur (Tsui, Pearce, Porter, & Hite, 1995; Raub, 1997; Sanders, 2000; Organ & Paine, 2000). This thesis studies the effects of two features of the social context in which interactions between individual employees take place: (1) temporal embeddedness, referring to the extent to which there are ongoing interactions between two actors and the likelihood that they will meet each other in the future; and (2) network embeddedness, referring to the extent to which a relationship between two actors is part of a larger network of relationships (Granovetter, 1985; Raub, 1997; Buskens, 2002; Buskens & Raub, 2002).

Research into the effects of temporary employment relationships on employee behavior has rendered inconclusive results. Some argue that temporary employees will show less solidarity because of their exchange relation with the organization while others emphasize that temporary workers may show more cooperation to acquire a permanent employment status. Empirical research shows mixed findings as well. The research described in this thesis aims at providing more insight into the relationship between temporary employment relationships and solidary behavior of employees within organizations. Their temporal and network embeddedness was examined in four empirical studies, some of them encompassing many different organizations. The general question underlying the four studies is: *Can temporal and network embeddedness account for the inconclusive findings regarding the effects of temporary employment relationships on solidary types of behavior of employees?*

This concluding chapter evaluates to what extent the four studies contribute to answer this general question. Section 6.2 gives an overview of the main mechanisms studied in this thesis. Section 6.3 provides an overview of the data sources used in the different chapters. Section 6.4 evaluates the main findings of this thesis, their theoretical implications, and how they relate to earlier research. Section 6.5 discusses the limitations and strengths of the studies as well as suggestions for future research. The practical implications of the empirical studies are given in section 6.6.

6.2 HYPOTHESES

The four empirical studies described in this thesis aim at contributing to the understanding of the effects of temporary employment relationships on solidarity by examining how temporal and network embeddedness of employees affect their solidary behavior. Temporal and network embeddedness concern the social context of which employees are part. This section provides an overview of the main hypotheses tested throughout the thesis.

The level of solidarity that Ego shows toward Alter may be influenced by the solidarity that Alter shows toward Ego. Therefore, solidarity from Ego toward Alter refers to the relationship that they have. According to the *reciprocity* hypothesis, solidarity from Ego toward Alter will be influenced by solidarity from Alter toward Ego.

Since reciprocity of solidary types of behavior requires a sequence of moves, it is likely that solidary types of behavior between Ego and Alter are affected by the duration of their relationship. Therefore, it is investigated whether *temporal embeddedness* affects the behavior of Ego toward Alter. Temporal embeddedness is defined as the past and the future that Ego and Alter share in combination with the quality of their relationship (that is, the level of solidarity that they show toward each other). According to the hypotheses on effects that operate through temporal embeddedness, solidarity from Ego toward Alter is higher if Ego has positive previous experiences with Alter and if it is likely that Ego and Alter can continue a solidary relationship.

Solidarity may be influenced not only by the dyadic relationship between Ego and Alter; the larger network of which their relationship may be part will also play a role in Ego's level of solidarity. Such *network relationships* connect the individual to others through interdependencies. Employees may be interdependent in two ways: (1) in the sense of formal, task-related relationships; and (2) in the sense of informal, non task-related relationships. Task and informal interdependencies are hypothesized to positively influence the solidarity from Ego toward Alter. In

addition, it is hypothesized that Ego's solidarity toward Alter is affected by the combination of task and informal interdependence.

6.3 RESEARCH DESIGN

The studies are based on empirical data from four different sources: a survey among university employees, a survey among employees in different organizations, a vignette study, and ethnographic data. Therefore, the findings of this thesis are based on a broad variety of empirical material. First, different respondents are involved in the different studies. Second, the data are gathered using three different kinds of research methodologies. Third, the data are gathered at different levels of analysis. The aim of this design is to increase the robustness of the findings. In Chapter 4 and 5 of this thesis, the results from the studies are compared to each other by testing the same hypotheses on different datasets.

6.4 OVERVIEW OF THE FINDINGS

The data are used to investigate the extent to which solidarity of employees can be explained by reciprocity of behavior, temporal embeddedness, and network embeddedness. The hypotheses and findings concerning the three main subjects in this thesis are examined. Table 6.1 summarizes the hypotheses and the empirical results.

TABLE 6.1
Overview of hypotheses and findings¹

	Hypothesis	Result	Hypothesis	Result	Chapter
RECIPROCITY	+	Supported ^{a/b}	+	Supported ^{c/d}	3
TEMPORAL EMBEDDEDNESS					
Past and future	∩	Supported ^e			2
Learning from previous interactions			+	Supported ^d	4
Control through future interactions			+	Partially supported ^d	4
NETWORK EMBEDDEDNESS					
Formal network	+	Supported ^e			2
Informal tie supervisor	+	Not supported ^e			2
Informal tie co-workers	+	Supported ^e			2
Task interdependence			+	Supported ^d	5
Informal interdependence			+	Supported ^d	5
Compensation effect			+	Rejected ^d	5
Conflicting norms			-	Partially supported ^d	5

¹The notes in the table refer to the different dependent variables that have been studied: (a) Generalized Compliance (OCB); (b) Solidarity toward Supervisor; (c) Altruism (OCB); (d) Solidarity toward Co-workers; (e) OCB: Suggestions to Improve Work (OCB); no sign = no hypothesis tested.

6.4.1 RECIPROCITY

Chapter 3 contrasts solidary behavior with Organizational Citizenship Behavior (OCB), which is a kind of employee behavior that has attracted a lot of research attention. It consists of types of behavior that are beneficial for the organization but that are not enforced through the formal contract (Organ, 1988). Therefore, it is considered a form of solidarity: employees show behavior that is not directly in their best interest and that serves the common good. Although OCB research has yielded many insights, there are some unsolved issues concerning its measurement and theoretical explanation.

Chapter 3 takes issue with this and examines solidarity as a characteristic of the relationships employees have with other actors within the organization and not as an employee characteristic. It therefore studies behavior of Ego that depends on the behavior of Alter. Moreover, since it is assumed that solidarity depends on the types of behavior that actors show toward each other within a relationship, it is implied that it is necessary to determine who is solidary with whom. Since organizations comprise relationships between employees and supervisors as well as between employees at the same hierarchical level, a distinction is made between vertical and horizontal solidarity.

The results, based on information from 674 employees working at nine organizations, show that Organizational Solidarity refers to reciprocal types of behavior in horizontal and vertical relations. Solidarity from the supervisor is positively related to solidarity toward the supervisor and solidarity from co-workers is positively related to solidarity toward co-workers. OCB toward the organization (in OCB research referred to as generalized compliance) is positively related to solidarity from the supervisor and OCB toward co-workers (referred to as altruism) is related to solidarity from co-workers.

The findings in Chapter 3 confirm that solidary types of behavior are reciprocal. Ego's behavior toward a specific Alter can be understood as a response to the behavior of that Alter. The finding that solidary behavior is reciprocal within relationships with specific others may be used to understand employee behavior such as OCB. To examine these exchanges, behavior of Ego and Alter should be included in the analysis. Within this framework, the direct social context of employees is included in theory and research. So far, most of the OCB research has focused on the individual employee level of theory, measurement, and analyses. At the same time, researchers acknowledge that in order to understand and explain OCB, theories taking contextual variables into consideration are required (Schnake & Dumler, 2003). The results of Chapter 3 suggest how the social context can be included in future studies. Recent research has shown how involvement in OCB

toward the organization is influenced by the OCB that other team members show toward the organization (Bommer, Miles & Grover, 2003) and how OCB is influenced by social exchange (Organ, 1988; Konovsky, & Pugh, 1994). This kind of research can be extended by studying in more detail if OCB toward the organization is affected by behavior from managers (Hodson, 1999) and if OCB toward team members is affected by OCB from team members.

6.4.2 TEMPORAL EMBEDDEDNESS

Temporal embeddedness refers to the past and future of an ongoing relationship between two actors. Positive past interactions are assumed to increase solidarity because actors have the possibility to learn about each other's behavior and when it is likely that there will be interactions in the future, the actors have the possibility to control each other's behavior. Temporal embeddedness is therefore a combination of interactions in the past, the likelihood of future interactions, and the mutual solidarity between Ego and Alter. Chapters 2 and 4 investigate the effects of temporal embeddedness.

In Chapter 2, the focus is on how solidarity of employees changes over the course of their contract. It investigates how their behavior changes as their employment relationship develops and what happens when their contract reaches the end. The results of Chapter 2, based on 262 Ph.D. students employed at a university, show that the extent to which employees are engaged in solidary types of behavior is lower at the start and end of the employment relationship, compared to the years in-between. The conclusions about temporal embeddedness drawn from this study are limited because there is no information available about previous experiences with others. To be able to test hypotheses concerning learning and control through temporal embeddedness, Chapter 4 includes information about the past with Alter. The results from two different studies – a survey among 736 employees at ten organizations and a study containing information on 1040 vignettes – show that learning from past interactions influences solidarity toward co-workers. There is partial support for the control through future interaction mechanism.

Based on these two chapters, the conclusion is that solidarity from employees is affected by the past and future of relationships and that temporal embeddedness is not just a matter of relationship length but depends crucially on the quality of the past between Ego and Alter. The relationship that Ego has with Alter is an important factor in understanding solidary behavior. Also, temporary employment relationships and temporal embeddedness are to be distinguished from each other. Temporary employment relationships refer to relationships with a short past and a

short future. However, employees with a permanent contract can – for various reasons such as having joined a team only recently or leaving a team in the near future – likewise have a relationship with a short past and a short future. Moreover, an exclusive focus on the length of the relationship between employees would neglect the quality of this relationship. Chapter 4 indeed shows that neither the employment status nor the length of the relationship with others does affect the level of solidarity toward them.

6.4.3 NETWORK EMBEDDEDNESS

The networks in which employees are embedded also affect their solidarity. In Chapter 4, it is shown that temporal embeddedness influences how much solidary behavior employees show. Chapters 2 and 5 focus on whether network embeddedness can likewise provide conditions for the development and maintenance of solidarity. Networks consist of individuals who are interdependent with each other for the joint production of collective goods. Within teams, employees have task and informal interdependence relations with others. Task interdependence refers to the work-related relationships and is assumed to be based on mutual control. Informal interdependence refers to the personal relationships that employees have with one another and is assumed to be based on mutual trust. Chapter 2 investigates how formal and informal network embeddedness influence solidarity of Ph.D. students in the sense of them offering suggestions for the improvement of research and education within a university. Chapter 5 focuses on solidarity toward co-workers and investigates the combined effect of formal and informal networks. The empirical data of Chapter 5 consists of two studies. Study 1 uses a dataset with 204 coded ethnographies and study 2 is based on a survey among 736 employees at ten organizations.

With regard to formal network embeddedness, Chapter 2 concludes that Ph.D. candidates employed at university faculties that are focused more on research than on education show more solidarity. This means that when their own work is more central to the output of the organization, their formal interdependence is higher and therefore they show more solidarity. In addition to that, in Chapter 5 a positive relation is found between formal network embeddedness, in the sense of task interdependence, and solidarity toward co-workers. With regard to the informal network in which trust is assumed a facilitator of solidarity, Chapter 2 shows that the quality of the horizontal relationships with co-workers positively influences solidarity. In addition to the findings of Chapter 2, Chapter 5 shows that informal interdependence positively influences solidarity toward co-workers. These findings

are in line with current research investigating the role of trust relationships within team environments (e.g. Creed & Miles, 1996).

Employees are simultaneously part of different networks. Such networks can either reinforce each other or can lead to conflicting norms, resulting in a reduction of solidary behavior. Chapter 5 examines the mutual effect of task and informal interdependence on solidarity toward co-workers. Evidence is found for the conflicting norms hypothesis predicting a negative interaction effect between task and informal interdependence. This finding supports the view that task and informal interdependence can replace each other but may be problematic when present at the same time. Teams in which actors control each other can make sure that everyone contributes, but at the same time this control behavior means that there is a lack of trust in co-workers (Langfred, 2004).

6.5 LIMITATIONS, STRENGTHS AND FUTURE RESEARCH

6.5.1 LIMITATIONS AND STRENGTHS

The studies are based on cross-sectional data and therefore causal inferences are impossible to make and the direction of the relationships may be reversed in some instances. For example, instead of asking whether informal interdependence influences solidary behavior, the question can be posed whether a high level of solidarity can increase informal relationships within a team. Although such questions are worth investigating, the theoretical arguments presented throughout the thesis indicate otherwise. This does not exclude the possibility that feedback mechanisms may be at work. The vignette study offers the possibility to get around the causality problem to some extent. The respondents were faced with a fixed situation to which they had to respond. Their answers are indeed based on that specific situation and not the other way around.

A second limitation of the study concerns the measurements. The information about the behavior of the respondents is gathered by means of a questionnaire. This way of collecting data has the advantage that it is possible to get a large amount of comparable data from many respondents. A weakness is that it does not measure actual behavior but only intentions or perceptions, which are subjective to a certain extent. The intentions and perceptions of the employees are investigated with two different research methods. First, the two surveys ask them about their own behavior and that of co-workers. Second, in the vignette study they are asked to indicate the likelihood of helping a hypothetical co-worker with randomly assigned characteristics. In addition to these data, the workplace ethnography data comprises information gathered through direct observations and therefore reports on actual

behavior of employees. The problem, however, is not completely solved because the data are interpreted first by the observer and then by the person who codes the ethnography. To overcome these issues, the results of the datasets are compared. Using empirical data including information from different sources, gathered with different research methods and at different levels, is an important advantage of combining the four studies. The combination of this empirical material provides insights into the relation between embeddedness and solidarity from employees. Furthermore, a combination of previous validated and new measurements – in particular, the solidarity scale based on Lindenberg (1998) – is used in the survey, and therefore comparisons of these measurements are possible. The reliability and validity of some of the scales are investigated and can be used in future studies.

Finally, the findings may be affected by the kind of organizations that participated in the study. They are not a random sample from all economic sectors. Instead, organizations providing services form the major part of the survey. Therefore, one should be careful when generalizing the findings because other situational factors may affect the level of solidarity as well. Such organizational factors are not of primary interest to the current studies, that focus on how the behavior of individual employees is affected by their social context. Besides that, the survey data are gathered across several organizations and therefore it is possible to check for these influences to some extent. In addition, the workplace ethnographies include organizations from all economic sectors. Again, the use of more than one datasets aims at investigating the robustness of the results.

6.5.2 FUTURE RESEARCH

ORGANIZATIONAL BEHAVIOR AND ORGANIZATION THEORY

One of the main conclusions is that dyadic and network relations influence solitary types of behavior within organizations. This is not limited to the field of OCB and interpersonal solidarity, and it is possible to study other kinds of organizational behavior by examining the effects of the temporal and network embeddedness of actors. This section discusses several suggestions for future research.

The first suggestion concerns the dependent variable. In the studies described, the focus is on solitary types of behavior. It is likely that the temporal and network embeddedness of employees will also affect other types of behavior. It can for instance be argued that temporal and network embeddedness may influence voluntary turnover behavior. Having strong relationships with others can be a reason for employees to stay within an organization, even when they have attractive options outside the organization. Although these effects are theoretically plausible, there has

been only little empirical attention for this (Krackhardt & Brass, 1994). In addition to that, other kinds of organizational behavior can be studied.

The second suggestion for future studies concerns a more detailed and theoretically more elaborated measurement of temporal embeddedness. Arguably, rather than asking retrospective questions, longitudinal designs would be preferable for measuring the previous relationship between actors. This may require a research design comparable to studies that have examined psychological contract breaches over time (Robinson, Kraatz, & Rousseau, 1994; Robinson, 1996). In addition to that, future studies should include additional information about Alter because other characteristics and types of behavior shown by Alter may affect Ego's likelihood to show certain types of behavior toward Alter. For instance, the question can be posed whether it matters if Ego and Alter have the same gender (Van der Hulst, 2004).

The third suggestion for future research concerns the addition of other forms of embeddedness. The emphasis has been on how dyadic and network relations affect solidary types of behavior shown by employees. How important these relationships are for an employee may also be affected by factors at a higher level. Future research, for instance, can investigate to what extent solidarity toward co-workers is affected by relationships with other teams within the same organization. Moreover, this thesis did not investigate the influence of institutional embeddedness (Raub, 1997; Dacin, Ventresca, & Beal, 1999). This kind of embeddedness can be integrated into the current research in several ways. To start with, the effects of different Human Resource Management systems on solidary types of behavior can be studied (Bowen & Ostroff, 2004). In addition to that, the organizational environments and product and labor market characteristics especially, require additional research. Such a study should, for instance, aim at further investigating how labor market opportunities and threats affect solidary types of behaviors shown by employees (Van Dyne & Ang, 1998). Finally, institutional embeddedness can be studied by examining the management of temporary employment relationships. In particular, future studies should address questions concerning the effects of temporary help agencies on solidary behavior of employees (Kalleberg, 2000). Conversely, future research can investigate how organizations manage their relationships with temporary help agencies.

The fourth suggestion concerns the effect of solidary behavior on organizational level performance indicators such as productivity and innovativeness. According to organizational theorists, organizational performance is the ultimate variable in this kind of research because it indicates how important a certain phenomenon is for the functioning of an organization (Scott, 2000). However, there

is very little research linking individual behavior with organizational performance (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). A recent study combining the Solidarity at Work Survey with some performance measures indicate that solidary types of behavior may indeed affect organizational performance (Zwiers, 2004), but additional research with more organizations is needed to understand the relationship between solidary behavior and organizational performance.

LABOR FLEXIBILITY RESEARCH

The findings also have implications for the studying of labor flexibility. Many classifications of flexibility distinguish between internal and external employees (Atkinson, 1984; Kalleberg, 2000). This distinction is based on whether employees have a permanent contract with the organizations or not. Using temporal embeddedness can refine the distinction between internal and external employees. Such a distinction should include information about the length of the past, the likelihood of interactions in the future and the quality of the relation between Ego and Alter. Including the level of network embeddedness of employees as well could extend the distinction even further.

An application of the findings concerning temporal and network embeddedness, would be the 'flexible firm' model, which views organizations as consisting of a strategic core of workers central to the organization with the other employees at the periphery (Atkinson, 1984). A series of empirical investigations, however, did not find convincing support for the core-periphery model (Hunter, 1993; Pollert, 1998). The lack of evidence for this model may be due to a too crude distinction between employees who are insiders and those who are outsiders. A more fine-grained examination will be possible by building and testing a model based on the temporal and network embeddedness of employees.

6.6 PRACTICAL IMPLICATIONS

The main message of this thesis is that solidary behavior of employees is affected by reciprocity, temporal embeddedness, and network embeddedness. The most important findings of the studies concern the relationships of employees with supervisors and co-workers. The practical implications are thus aimed at the management of social relationships and resources. Therefore they deal with Social Resources Management (SRM) (Brass & Labianca, 1999) as an addition to Human Resource Management (HRM). The rationale behind this is that the ways in which people are combined and aligned, give organizations a competitive advantage (Snell & Wright, 1999). In general, the implication for managers is that if they demand

solidary types of behaviors from their employees, they will have to be aware of the relationships between their employees and try to manage these. Managers that try to increase solidary behavior between their employees are expected to play an active role in this process. Therefore, one of the first things that managers should try to work on is the establishment of trust relationships with the people they manage. If they are not able to establish these relationships, they will not be able to get the information that is required to manage the social relationships between their subordinates.

Managers are sometimes advised to create long-lasting relationships that are expected to increase contributions from employees. It is true that a certain level of stability creates possibilities to build up solidary relationships and organizational social capital (Leana & Van Buren, 1999). However, it depends on the actual types of behavior among actors whether this will indeed lead to solidary relationships. The results presented in this thesis show that creation of long-lasting employment relationships may work, but also that they are not the only strategy for an organization to pursue.

The same active role holds for the management of networks. Formal and informal interdependence positively affects solidary types of behavior. High formal and informal interdependence may result in a lower level of solidarity toward co-workers. Managers can create formal interdependence between employees and, as such, influence the level of solidarity toward co-workers. When there is a high level of informal interdependence within a team that is also formally interdependent, a manager may choose to decrease the level of formal interdependence or replace some of the members of the team by new members. If strong task interdependence is inherent to the production process, managers may deliberately shift team membership regularly to avoid the negative interaction between the two forms of interdependence. Managers should be particularly sensitive as to which informal network structures emerge from informal interdependence. If informal network structures lead to coherent structures at the team level, they are likely to reinforce task interdependence within the team, whereas coherent subgroups within a team may easily provoke antagonisms within the team that interact negatively with task interdependence. Unfortunately, we were unable to investigate this in our studies, but the interactions between different social network structures should be placed high on the agenda of organizational research.

6.7 CONCLUDING REMARKS

The consequences of labor flexibility, and in particular temporary employment relationships, for individuals, teams and organizations have been subject to speculation. Moreover, research concerning the effects of temporary employment relationships has not yielded definitive conclusions. The aim of this thesis was to put some of these speculations to the test. The hypotheses tested clearly show that the social context of employees influences their behavior. These results can be used to explain why research regarding the effects of temporary employment relationships on cooperative types of behavior of employees has generated inconclusive results. Additional investigations are needed to further improve and extend the current research. This chapter has provided some suggestions for future studies.

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APPENDICES

APPENDIX A. OVERVIEW OF THE UNIVERSITY DEPARTMENTS

- **Liberal arts:** Faculty of Arts, Faculty of Law, Faculty of Philosophy, and Faculty of Theology.
- **Natural sciences:** Faculty of Mathematics and Computer Science, Faculty of Physics and Astronomy, and Faculty of Earth Sciences.
- **Social sciences:** Faculty of Social Sciences, and Faculty of Geographical Sciences.
- **Biomedical sciences:** Faculty of Medicine, Faculty of Pharmaceutical Sciences, Faculty of Veterinary Medicine, Faculty of Chemistry, and Faculty of Biology.

APPENDIX B: OVERVIEW OF SCALES AND ITEMS

Chapter 2 (University Survey)

Variable	Item
Organizational citizenship behavior	I work as many hours as necessary to finish my work (Reverse coded) I always think constructively about changes that are possible within the department I regularly make suggestions to improve research or education I devote a lot of attention to giving feedback to co-workers I keep my doubts concerning departmental affairs to myself (Reverse coded)
Organizational commitment	I am proud to work here I really have the feeling that I belong at [name university] Working for [name university] means a lot to me
Year of entry	Year started
Formal network	Number of Ph.D. degrees/number of professors
Informal network supervisor	How strong is your tie with your supervisor?
Informal network co-workers	How strong is your tie with co-workers?
Age	What is your year of birth?
Gender	What is your gender?

Chapter 3 (Solidarity at Work Survey)

Variable	Item
Solidarity toward supervisor	<p>I help my supervisor to finish tasks</p> <p>I am willing to help my supervisor when things go wrong unexpectedly</p> <p>I apologize to my co-supervisor when I made a mistake</p> <p>I try to divide the pleasant and unpleasant tasks equally between myself and my supervisor</p> <p>I live up to agreements with my supervisor</p>
Solidarity from supervisor	<p>My supervisor helps me to finish tasks</p> <p>My supervisor is willing to help me when things go wrong unexpectedly</p> <p>My supervisor apologizes to me when they have made a mistake</p> <p>My supervisor divides the pleasant and unpleasant tasks equally between them and me</p> <p>My supervisor lives up to agreements with me</p>
Solidarity toward co-workers	<p>I help my co-workers to finish tasks</p> <p>I am willing to help my co-workers when things go wrong unexpectedly</p> <p>I apologize to my co-workers when I made a mistake</p> <p>I try to divide the pleasant and unpleasant tasks equally between myself and my co-workers</p> <p>I live up to agreements with my co-workers</p>
Solidarity from co-workers	<p>My co-workers help me to finish tasks</p> <p>My co-workers are willing to help me when things go wrong unexpectedly</p> <p>My co-workers apologize to me when they have made a mistake</p> <p>My co-workers divide the pleasant and unpleasant tasks equally between them and me</p> <p>My co-workers live up to agreements with me</p>
Generalized compliance	<p>I fulfill the obligations as stated in my job description</p> <p>I fulfill all formal responsibilities that come with my job</p> <p>I am satisfied with my job performance</p>
Altruism	<p>I will help someone who is very busy</p> <p>I will help doing tasks for others when they are sick or absent</p>
Task interdependence	<p>To perform my tasks, I need information from other team members</p> <p>I depend on my co-workers in order to be able to do my work well</p> <p>To perform my tasks, I have to work together with other team members</p>
Gender	<p>What is your gender?</p>
Educational level	<p>What is the highest level of education that you completed?</p>

Chapter 4: Study 1 (Solidarity at Work Survey)

Variable	Item
Solidarity toward co-workers	I help my co-workers to finish tasks I am willing to help my co-workers when things go wrong unexpectedly I apologize to my co-workers when I made a mistake I try to divide the pleasant and unpleasant tasks equally between myself and my co-workers I live up to agreements with my co-workers
Solidarity from co-workers	My co-workers help me to finish tasks My co-workers are willing to help me when things go wrong unexpectedly My co-workers apologize to me when they have made a mistake My co-workers divide the pleasant and unpleasant tasks equally between them and me My co-workers live up to agreements with me
Past with co-workers	With how many of you co-workers have you been working for a long time in the same team?
Future with co-workers	With how many of you co-workers do you expect to be working for a long time in the same team?
Temporary employment relationship	What type of contract do you have?
Gender	What is your gender?
Size	How many members does your team have?
Autonomy	Number of tasks current position Degree of responsibility current position Degree of autonomy current position

Chapter 5: Study 1 (Workplace Ethnographies)

Variable	Item
Solidarity toward co-workers	Informal peer training
Task interdependence	Team organization of work
Informal interdependence	Social friendship
Percentage temporary workers	Temporary workers employed
Gender	Percentage women
Educational level	Modal completed education
Age	Median age of the workgroup members

Chapter 5: Study 2 (Solidarity at Work Survey)

Variable	Item
Solidarity toward co-workers	I help my co-workers to finish tasks I am willing to help my co-workers when things go wrong unexpectedly I apologize to my co-workers when I made a mistake I try to divide the pleasant and unpleasant tasks equally between myself and my co-workers I live up to agreements with my co-workers
Task interdependence	In order to do my job, I need information from my team members I depend heavily on my team members to be able to do my job In order to be able to do my job well, I need to cooperate with my team members I need to cooperate regularly with most of my team members
Informal interdependence	With how many people of your team do you occasionally talk about personal things? With which part of your team do you engage in activities inside and outside of work? With which part of your team did you engage in one of the following activities: to go to dinner, to go to the movies, visiting? With which part of your team do you have a good personal relationship? Which part of all persons you get along with very well, is also part of your team?
Temporary employment relationship	What type of contract do you have?
Gender	What is your gender?
Educational level	What is the highest level of education that you completed?
Age	What is your year of birth?

SAMENVATTING (DUTCH SUMMARY)

VOOR ZOLANG HET DUURT. Een verklaring voor tegenstrijdige uitkomsten van onderzoek naar effecten van tijdelijke arbeidsrelaties op solidair gedrag van medewerkers

HOOFDSTUK 1: INLEIDING

In veel moderne arbeidsorganisaties wordt gebruik gemaakt van teams om te kunnen reageren op veranderingen in de organisatieomgeving (Cohen & Bailey, 1997). Binnen deze teams wordt van individuele medewerkers verwacht dat zij hun onderlinge taken op elkaar afstemmen om een gezamenlijke taak te volbrengen. Hierbij kunnen individuele belangen en het algemeen belang conflicteren omdat het team als geheel er baat bij heeft als elke medewerker bijdraagt aan de teamtaak terwijl elke medewerker afzonderlijk er voordeel bij heeft als de anderen het werk op zich nemen (March & Simon, 1958; Miller, 1992). Van solidair gedrag is sprake als medewerkers bijdragen aan het collectieve goed (Hechter, 1987; Lindenberg, 1998), in dit geval is dat het afronden van de teamtaak.

De verwachting is dat solidair gedrag wordt beïnvloed door *reciprociteit* (wederkerigheid) van solidair gedrag tussen twee of meer personen. De mate waarin reciprociteit van solidair gedrag mogelijk is hangt af van de mate waarin deze personen over elkaar kunnen *leren* en/of elkaars gedrag kunnen *controleren*. In de directe relatie die een medewerker heeft met iemand anders (een collega of een leidinggevende) kan de medewerker over deze persoon leren als interacties hebben plaatsgevonden in het verleden en is controle mogelijk als zij een gezamenlijke toekomst hebben. Leren en controleren door verleden en toekomst wordt *temporele inbedding* genoemd. Daarnaast kan een medewerker over een ander leren en hen

controleren als hun relatie deel uitmaakt van een groter netwerk aan relaties. Dit wordt *netwerkinbedding* genoemd (Granovetter, 1985; Raub, 1997; Buskens, 2002).

De mate waarin medewerkers zijn ingebed in de organisatie zou kunnen afnemen door de toenemende vraag naar *tijdelijke arbeidsrelaties* (Tsui, Pearce, Porter, & Hite, 1995; Raub, 1997; Sanders, 2000; Sanders, Van Emmerik, & Raub, 2002). De afgelopen jaren heeft een stijging plaatsgevonden van het aantal tijdelijke contracten. In Nederland werkt momenteel ongeveer 14 procent van de werknemers op basis van een tijdelijk contract. De vraag is wat de gevolgen zijn van tijdelijke arbeidscontracten voor solidaire gedragingen van medewerkers. Onderzoek waarin het gedrag van tijdelijke en vaste medewerkers wordt vergeleken levert een diffuus beeld op. Volgens sommige onderzoeken leidt een tijdelijke arbeidsrelatie tot minder solidaire gedragingen, in andere studies worden wat dat betreft geen verschillen gevonden tussen tijdelijke en vaste medewerkers en ten slotte is er onderzoek dat laat zien dat medewerkers met een tijdelijk contract meer solidair zijn met de organisatie (Pearce, 1993; Van Dyne & Ang, 1998; Moorman & Harland, 2002). Het is daarom mogelijk dat solidair gedrag en tijdelijke arbeidsrelaties onder bepaalde condities samengaan. Welke condities dit zijn is vanuit praktisch oogpunt relevant aangezien werkgevers in toenemende mate solidair gedrag verwachten van hun medewerkers. Daarnaast is het van wetenschappelijk belang empirisch te toetsen in hoeverre en op welke wijze temporele en netwerkinbedding solidair gedrag beïnvloeden. Het doel van dit boek is deze condities te onderzoeken aan de hand van de volgende probleemstelling: *Kunnen de tegenstrijdige uitkomsten van onderzoek naar de relatie tussen tijdelijke arbeidsrelaties en solidair gedrag van medewerkers worden verklaard door hun temporele en netwerkinbedding in ogenschouw te nemen?*

Voor de beantwoording van de onderzoeksvragen worden in dit boek vier verschillende databronnen geanalyseerd en vergeleken. Ten eerste wordt gebruik gemaakt van gegevens die zijn verzameld onder universiteitspersoneel voor een onderzoek naar loopbanen van medewerkers. Hiervan zijn de gegevens van 262 tijdelijke medewerkers gebruikt (Dekker, 2000). Ten tweede is een grootschalig vragenlijstonderzoek uitgevoerd onder de medewerkers van 15 verschillende organisaties (Lambooy, Sanders, Koster, Van Emmerik, Raub, Flache, & Wittek, 2003). Ten derde is gebruik gemaakt van een vignettenonderzoek onder 260 medewerkers binnen vijf organisaties. Ten vierde zijn data geanalyseerd afkomstig van etnografische beschrijvingen van organisaties (Hodson, 1998).

HOOFDSTUK 2: SOLIDAIR GEDRAG VAN TIJDELIJKE MEDEWERKERS. De effecten van tijdelijke en netwerkinbedding op solidair gedrag van AiO's

In dit hoofdstuk wordt onderzocht in hoeverre Assistenten in Opleiding (AiO's) – onderzoekers met een tijdelijk arbeidscontract – solidair gedrag vertonen, in de zin van het doen van voorstellen voor het verbeteren van de werkwijze binnen hun faculteit. Omdat zij voor een beperkte tijd deel uitmaken van de organisatie kan worden beargumenteerd dat zij relatief weinig solidair gedrag zullen vertonen. De vraag die in dit hoofdstuk wordt gesteld is onder welke condities solidair gedrag van tijdelijke medewerkers tot stand komt. Hierbij is onderzocht in hoeverre de mate van temporele en netwerkinbedding effecten hebben op solidair gedrag.

Uit de analyses blijkt dat (1) solidair gedrag van de AiO's afhankelijk is van de fase van het arbeidscontract. De mate van solidair gedrag is aan het begin en het eind van het contract lager dan in de middenfase; (2) AiO's in de onderzoeksgerichte faculteiten meer solidair gedrag vertonen dan die in onderwijsgerichte faculteiten; en (3) AiO's die aangeven goede relaties te onderhouden met collega's meer solidair gedrag vertonen. Er werd geen relatie gevonden tussen de mate van solidair gedrag en de kwaliteit van de relatie met de leidinggevende.

Samenvattend kan worden gesteld dat tijdelijke medewerkers verschillen in de mate waarin zij solidair gedrag vertonen. Het solidaire gedrag van deze medewerkers blijkt afhankelijk te zijn van de mate waarin zij zijn ingebed in de organisatie. Dit in tegenstelling tot de gebruikelijke veronderstelling dat alle tijdelijke medewerkers evenveel solidair gedrag vertonen.

HOOFDSTUK 3. ORGANISATIONELE BURGERS OF WEDERKERIGE RELATIES? Een empirische vergelijking

'Organizational Citizenship Behavior' (OCB, oftewel 'Organisationeel Burgerschap') (Organ, 1988) is een veel bestudeerde vorm van solidair gedrag binnen organisatieonderzoek. OCB omvat gedragingen van medewerkers die het functioneren van de organisatie verbeteren maar die niet in de functieomschrijving staan en die niet worden beloond via de formele beloningsstructuur. In de loop der tijd is de aandacht voor OCB, uitgedrukt in het aantal gepubliceerde artikelen, sterk toegenomen. In overzichtsartikelen die het onderzoeksveld samenvatten komen onder andere de volgende punten van kritiek naar voren (Motowidlo, 2000; LePine, Erez, & Johnson, 2002).

Ten eerste is onduidelijk uit welke dimensies OCB precies bestaat. In de loop der tijd varieert het aantal onderscheiden dimensies. Ten tweede, blijkt het onderscheid tussen wat formeel en informeel wordt verwacht van medewerkers blijkt in de praktijk moeilijk te maken. Ten derde, ontbreekt een eenduidige theoretische verklaring voor het al dan niet optreden van OCB-gedrag. Onderzoek naar OCB kan op deze punten worden verbeterd.

In dit hoofdstuk wordt daartoe een poging ondernomen door OCB te vergelijken met Organizational Solidarity (OS; 'Organisatiesolidariteit'). OS verschilt van OCB op de volgende punten. Ten eerste gaat het bij OS om gedrag dat een bepaalde medewerker vertoont naar iemand anders. Ten tweede wordt in het geval van OS benadrukt dat solidair gedrag niet vanzelf ontstaat maar dat aan het vertonen van dit gedrag kosten en opbrengsten zijn verbonden. Ten derde, worden deze kosten en opbrengsten beïnvloed door de mate waarin de andere persoon solidair gedrag vertoont. De hypothesen zijn getoetst met behulp van de vragenlijstdata.

De uitkomsten zijn als volgt samen te vatten: (1) er kunnen verschillende vormen van OS onderscheiden kunnen worden. OS valt uiteen in solidair gedrag naar de leidinggevende, solidair gedrag van de leidinggevende, solidair gedrag naar collega's en solidair gedrag van collega's en (2) verticaal solidair gedrag hangt samen met solidair gedrag van de leidinggevende en horizontaal solidair gedrag hangt samen met solidair gedrag van de collega's.

Deze uitkomsten impliceren dat medewerkers zich solidair naar hun leidinggevende kunnen gedragen maar dat dit niet noodzakelijkerwijs betekent dat ze zich ook solidair naar hun collega's gedragen en omgekeerd.

HOODSTUK 4. SERIËLE SOLIDARITEIT. De effecten van ervaringen en verwachtingen op coöperatief gedrag in teams

Een veel voorkomende veronderstelling in onderzoek is dat het hebben van een vast arbeidscontract effect heeft op solidaire gedragingen van medewerkers omdat ervan uitgegaan wordt dat vaste medewerkers altijd een langdurige relatie hebben met elkaar en dat tijdelijke medewerkers per definitie voor een korte tijd met anderen zullen werken. Op deze veronderstelling kan worden afgedongen dat de duurzaamheid van de relaties tussen vaste medewerkers kan worden beïnvloed door bepaalde vormen van organisatiebeleid zoals functieroulatie en loopbaantrajecten. In dit hoofdstuk wordt het onderscheid tussen tijdelijke en vaste medewerkers niet gebruikt. In plaats daarvan wordt onderzocht in hoeverre de mate van solidair gedrag van medewerkers afhankelijk is van hun temporele inbedding. Dat betekent

dat wordt onderzocht welke invloed ervaringen uit het verleden en verwachtingen over de toekomst hebben op solidair gedrag van medewerkers onderling. De hypothesen zijn getoetst met behulp de vragenlijstdata en de vignettendata.

Dit leidt tot de volgende conclusies over de effecten van temporele inbedding op horizontale solidariteit: (1) tijdelijke en vaste medewerkers verschillen niet in hun solidair gedrag naar collega's; (2) ervaringen die medewerkers hebben opgedaan in eerdere interacties met collega's zijn van invloed op de mate waarin zij solidair zijn naar hun collega's. Als de collega's zich solidair hebben opgesteld in het verleden verhoogt dit de mate waarin medewerkers solidair gedrag vertonen. Als dat niet het geval is, vertoont de medewerker minder solidair gedrag en (3) studie 1 laat zien dat de mate van solidair gedrag van medewerkers hoger is als zij verwachten voor een langere tijd werkzaam te zijn met collega's die solidair gedrag vertonen. Studie 2 bevestigt deze bevinding niet, wat erop wijst dat de effecten van toekomstige verwachtingen niet in alle gevallen opgaan en alleen onder bepaalde condities optreden.

De eindconclusie van dit hoofdstuk luidt dat er verschil is tussen tijdelijke arbeidsrelaties en weinig temporele inbedding. Een belangrijk verschil is dat temporele inbedding zowel de duur als de kwaliteit van de relatie met anderen omvat. Op basis van het onderscheid tussen vaste en tijdelijke arbeidsrelaties wordt hiermee geen rekening gehouden.

HOOFDSTUK 5. SOLIDARITEIT DOOR NETWERKEN. De effecten van taak- en informele afhankelijkheid op coöperatief gedrag in teams

Naast dyadische relaties, kunnen netwerkrelaties ook het solidaire gedrag van medewerkers beïnvloeden. In dit hoofdstuk worden de effecten van twee verschillende netwerken onderzocht. Ten eerste wordt onderzocht welke effecten taakafhankelijkheid heeft voor solidair gedrag naar collega's. Taakafhankelijkheid houdt in dat medewerkers van elkaar afhankelijk zijn om een gezamenlijke taak te volbrengen, bijvoorbeeld omdat informatie-uitwisseling nodig is (Van de Ven, Delbecq & Koenig, 1976). Ten tweede wordt onderzocht welke rol informele afhankelijkheid speelt bij het totstandkomen van onderling solidair gedrag (Podolny & Baron, 1997). Het gaat hierbij om de persoonlijke relaties tussen medewerkers die de basis zijn voor onderlinge steun en vriendschappen. Voor de toetsing van de hypothesen is gebruik gemaakt van de vragenlijstdata en de etnografische data.

De uitkomsten van de twee studies zijn als volgt: (1) taakafhankelijkheid leidt tot meer solidair gedrag binnen teams; (2) informele afhankelijkheid leidt tot meer

solidair gedrag binnen teams; en (3) in studie 1 werd geen interactie-effect gevonden van taakafhankelijkheid en informele afhankelijkheid op solidair gedrag, in studie 2 was dit effect negatief.

Op basis van de resultaten uit dit hoofdstuk wordt geconcludeerd dat taakafhankelijkheid en informele afhankelijkheid afzonderlijk tot meer solidair gedrag kunnen leiden. Als de twee vormen van afhankelijkheid tegelijkertijd aanwezig zijn binnen een team bestaat de kans dat de mate van solidair gedrag afneemt.

HOOFDSTUK 6: CONCLUSIE

In dit laatste hoofdstuk worden de bevindingen van de eerdere hoofdstukken samengevat. Daarnaast wordt ingegaan op de beperkingen en sterke punten van de verschillende studies, worden suggesties gedaan voor verder onderzoek en wordt ingegaan op de praktische implicaties van de onderzoeksresultaten.

Centrale uitkomsten. De mate waarin een medewerker solidair gedrag vertoont naar een collega of de leidinggevende hangt samen met het gedrag van die andere persoon. Dit betekent dat solidair gedrag het resultaat is van *reciprociteit*. Omdat de mogelijkheid tot het vertonen van solidair gedrag en het beantwoorden ervan tijd vergt, leidt meer *temporele inbedding*, dat wil zeggen de duur van de relatie in combinatie met de kwaliteit ervan, tot meer solidair gedrag. *Netwerkinbedding* leidt tot meer solidair gedrag doordat medewerkers onderling afhankelijk van elkaar zijn. Echter, als medewerkers tegelijkertijd taakafhankelijk en informeel afhankelijk zijn bestaat de kans dat de mate waarin zij solidair gedrag vertonen juist afneemt.

Beperkingen en sterke punten. Ten eerste zijn de meeste datasets in dit onderzoek cross-sectioneel van aard waardoor uitspraken over oorzaak en gevolg moeilijk te onderzoeken zijn. Met het vignettenonderzoek is geprobeerd dit te ondervangen. Ten tweede kan als zwakte worden aangemerkt dat vooral gebruik is gemaakt van vragenlijstonderzoek en dat het gedrag van de medewerkers dus niet direct is gemeten. De etnografische data zijn data juist verzameld door observatie van werkelijk gedrag en vormen daarom een aanvulling op de vragenlijstdata. Ten derde is het overgrote deel van het vragenlijstonderzoek uitgevoerd onder medewerkers die werkzaam zijn binnen dienstverlenende organisaties. Hier staat tegenover dat de organisaties in de dataset met etnografische beschrijvingen wel bestaan uit een doorsnee van alle economische sectoren.

Suggesties voor verder onderzoek. Ten eerste kan het onderzoek naar inbeddingeffecten binnen organisaties verder uitgebreid worden door andere

afhankelijke variabelen, zoals vrijwillig verloop, te onderzoeken. Ten tweede loont het de moeite temporele inbedding meer gedetailleerd te onderzoeken, bijvoorbeeld door het volgen van teams gedurende een langere periode. Ten derde kan het onderzoek uitgebreid worden door naast temporele en netwerkinbedding de effecten andere vormen van inbedding (met name institutionele inbedding) te bestuderen. Ten vierde zal een koppeling gemaakt dienen te worden met prestatie-indicatoren om vast te stellen hoe belangrijk solidair gedrag is voor organisaties. Ten vijfde kunnen de gevonden resultaten worden gebruikt in onderzoek naar interne en externe arbeidsrelaties.

Praktische implicaties. De belangrijkste praktische implicaties van dit onderzoek liggen in het management van sociale hulpbronnen ('social resources') als een aanvulling op het management van menselijke hulpbronnen ('human resources') (Brass & Labianca, 1999). Het sturen van solidair gedrag vereist informatie over de onderlinge relaties binnen een team. Managers zullen deze informatie op een adequate wijze kunnen verkrijgen als zij een goede relatie hebben met hun medewerkers. Hierbij is het belangrijk te onderkennen dat het creëren van langdurige relaties op zichzelf niet direct positieve gevolgen hoeft te hebben voor solidair gedrag maar dat de kwaliteit van de relaties doorslaggevend is. Ten slotte luidt de aanbeveling dat managers gevoelig zouden moeten zijn voor de gevolgen van taakafhankelijkheid en informele vormen van afhankelijkheid binnen een team.

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