

SERIAL SOLIDARITY

The Effects of Experiences and Expectations on Cooperative Behavior of Employees

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ABSTRACT

There are two contrasting theoretical positions concerning the effects of temporary employment relationships on cooperative behavior of employees. According to the first, temporary employees show less effort than permanent workers because they have a limited exchange relationship with the organization. The other approach holds that temporary employees are motivated to achieve a permanent contract and hence will show more cooperative behavior than permanent employees. Empirical research is scarce and shows contradictory results. We argue that it is not the employment status that matters but that employee behavior depends on their level of temporal embeddedness: the experiences with co-workers in the past and the likelihood of future encounters with co-workers. We use two studies – a survey and a vignette study – to examine the effects of temporal embeddedness. The employment status of employees does not explain their behavior but examining their temporal embeddedness does.

KEY WORDS

Cooperative behavior, Temporal embeddedness, Temporary employment relationships

INTRODUCTION

Since the eighties, the number of people working through temporary employment arrangements has grown considerably. 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). By replacing permanent workers with temporary on-demand workers organizations, create flexible workforces that can respond quicker and more cost efficient to changing business conditions by laying off and rehiring employees which do not have an implicit or explicit contract for on-going employment (Pfeffer and Baron, 1988; Polivka and Nardone, 1989; Tsui, Pearce, Porter, and Hite, 1995; Feldman, Doerpinghaus, and Turnley, 1995; Matusik and Hill, 1998; Parker, Griffin, Sprigg, and Wall, 2002; Tan and Tan, 2002). 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 and Baron, 1988; Von Hippel, Mangum, Greenberger, Heneman, and Skoglind, 1997). Because of these benefits, temporary employment arrangements are attractive and many organizations use them (Goudswaard and Batenburg, 2000; Houseman, 2001).

To what extent does the increasing use of temporary employment contracts affect employee behavior? Are organizations with 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 and Brett, 1994; Raub, 1997; Sanders, 2000; Organ and Paine, 2000)? Some authors suggest that this may lead 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 and 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 and Miles, 2002). Moreover, organizations put more emphasis on cooperative behavior of their employees, while the use of temporary employment relationships may undermine such behavior (Davis-Blake and Uzzi, 1993; Pfeffer, 1994; Tsui et al., 1995; Koh and Yer, 2000; Moorman and Harland, 2002; Byoung-Hoon and Frenkel, 2004).

One theoretical expectation is that that exchange relationship that temporary workers have with the organization and co-workers is less positive than those of regular employees (Tsui et al., 1995; Tsui, Pearce, Porter, and Tripoli, 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, and Nelson, 1985; Cappelli, 1999). 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).

Other authors take a different stance and argue that temporary employment contracts may be a good thing for employees and employers as well, since it can serve as a stepping-stone from unemployment to employment (Booth, Francesconi and Frank, 2002). Accepting a temporary job gives them access to jobs that they otherwise could not get access to (Mangum, et al., 1985), increases their human capital through work experience and skills (Autor, Levy and Murnane, 1999; Paoli and Merrié , 2001), and

increases their possibilities to get in touch with employers and signal their ability (Storrie, 2002; Ichino, Mealli and Nannicini, 2004; Kvasnicka, 2005). As such, holding a temporary job may be an improvement of the situation with more opportunities than before. Above that, it is argued that temporary employees are interested in achieving a permanent status. Hence, they are expected to be highly motivated and show a lot of effort to improve their position. Since permanent employees do not have such incentives, they may show less cooperation (Hogan and Ragan, 1995).

These theories pose contradictory hypotheses. The empirical literature shows that relatively little is known about how temporary contracts affect attitudes and behavior at work; there are very few systematic studies on the effects of temporary contracts and findings from the available studies are inconsistent (Howe, 1986; Pfeffer and Baron, 1988; Kochan, Smith, Wells, and Rebitzer, 1994; Beard and Edwards, 1995; Nollen and Axel, 1996; Van Dyne and Ang, 1998). Some studies find negative effects (Moorman and Harland, 2002), others find no effects (Ashford, Lee and Bobko, 1989, Pearce, 1998; Van Dyne and Ang, 1998; Organ and Paine, 2000), and other researchers find positive effects (Hogan and Ragan, 1995). In this article we develop and test an alternative theoretical model.

COOPERATION AND EMBEDDEDNESS

Among researchers there is a long history in cooperative types of behavior and attitudes of employees and is conceptualized under different headings, such as ‘willingness to cooperate’ (Barnard, 1938), ‘prosocial organizational behavior’ (Brief and Motowidlo, 1986), ‘organizational citizenship behavior’ (Organ, 1988), and ‘contextual performance’

(Borman and Motowidlo, 1993). Employees can be cooperative with their supervisors and co-workers (Smith, Carroll, and Ashford, 1995). Within modern organizations, horizontal relationships between employees are increasingly important because many tasks require the simultaneous effort of more than one employee resulting in task interdependencies between them. This is for instance the case with team-based organizational structures in which employees are expected to coordinate their tasks and monitor the quality of each other's work (Cohen and Bailey, 1997). At the same time, when two or more employees task interdependent, the problem of solidarity arises: both of them are better off if their common task is completed but their individual return is lower when they contribute their time and effort than when they let others do the work. Therefore, there may be 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). As a result, cooperation does not come about automatically but some conditions may affect the likelihood of people showing it. Recent studies argue that the creation and maintenance of solidarity between actors depends on their level of embeddedness (Granovetter, 1985; Raub, 1997; Buskens, 2002; Buskens and Raub, 2002). Two mechanisms through which embeddedness may affect cooperation between actors are labeled learning and control. People can learn from each other's behavior and intentions through past interactions and control is possible when it is likely that employees will interact with each other in the future (Axelrod, 1984; Buskens, 2002; Buskens and Raub, 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 should be taken into account.

There are three major differences in studying the effects of employment status and those of temporal embeddedness. The first difference is that employment status refers to the total length of the relationship whereas the conception of temporal embeddedness focuses on conditions for cooperation that may come from past interactions and future interactions. The second difference is that temporal embeddedness not only refers to the length of past and the future of the relationship but also to quality of the relationship. The third difference is that the focus is relationships instead of the employment contract. The distinction between temporary and permanent employment contracts implicitly assumes 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, employees with a permanent contract may just have started their contract or their future with co-workers may be limited for instance because they are moving to a different part of the organization or considering to leave the organization completely.

Learning from past experiences

Learning about the behavior of co-workers may affect the level of cooperation that an employee shows towards them. 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 employees have two characteristics. First, each of them gains when trust is placed and honored. Second, an employee takes a risk when placing trust in other employees because they can take advantage of the

situation and abuse the employee's trust (Raub, 1997). When a co-worker asks the employee for a favor, a trust problem arises because the employee does not know for sure if the co-workers will return the favor later. It is quite possible that the co-worker behaves opportunistically by accepting the help without returning it. Given this trust problem, the likelihood that an employee will assist a co-worker may be very low.

The trust problem arises because the co-worker has the possibility to abuse the employee's trust. If the employee has more information about the trustworthiness of the co-worker, the expectation is that the employee will be more willing to place trust in co-worker. Estimating the other's trustworthiness is easier when there have been previous interactions between the employees in which information is gathered about the behavior and intentions of the other employee. Therefore, when time passes and there are more interactions between them, the employee knows whether it is reasonable to expect that the co-worker will show solidarity (Rholes, Newman and Ruble, 1990; Hinds, Carley, Krackhardt, and Wholey, 2000). If the employee has shown solidarity toward a co-worker in the past and the co-worker does not show solidarity toward the employee on a later occasion, the employee knows that the co-worker acted opportunistically and is thus not a reliable person. As a result, the level of solidarity between employees depends on the exchanges that took place between them over the course of their relationship. A history of successful interactions between them increases their solidarity (Batenburg, Raub, and Snijders, 2003).

Previous Experiences Hypothesis (Hypothesis 1):

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

Control through future interactions

Another source of trust between employees is provided by the control mechanism that is present when they share a common future. A shared future promotes solidarity through conditional cooperation (Axelrod, 1984). When it is likely that there will be interactions between them in the future, the employee can try to exercise control over the behavior of the co-worker 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 the co-worker to show solidarity toward the employee. If there is a sufficient shadow of the future between them, a series of cooperative moves between the employees can occur, since a good move by one employees can be rewarded by the other and a bad move can be reciprocated with a negative sanction (Axelrod, 1984; Spicer, 1985; Buskens, 2002).

The present level of solidarity between employees may influence the effect of a shared future (Raub, 1997; Batenburg et al., 2003). When there have been no interactions between them in the past, they do not have direct information about each other's behavior in the future. Nevertheless, if they have interacted in the past, a solidary relationship may have developed. Moreover, people tend to expect that another person's past behavior will be similar to that in future interactions (Rholes et al., 1990). When the co-worker has already been solidary toward the employee, a long shadow of the future will increase the employee's solidarity because there is a good reason to trust the co-worker in the future as well. If the employees do not expect to interact in the future or when there is a lack of

solidarity between them, these incentives are much lower. 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.

DATA

Two different datasets – an employee survey and a vignette study – are used to test the hypotheses. Using different datasets to test the same hypotheses is a form of triangulation (Denzin, 1978; Scandura and 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 and Fiske, 1959; Jick, 1979).

STUDY 1: SURVEY

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.

Procedure

Questionnaires are developed to gather data among employees (for the complete questionnaire see Lambooi, Sanders, Koster, Emmerik, Raub, Flache, and 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.

Measures

Dependent variable

The items measuring *solidarity toward co-workers* are based on Lindenberg (1998), applied to behavior in organizations (Sanders, 2004). 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

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).

Solidarity from co-workers is measured with five items on a seven point scale: (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** include those arrangements where there is no implicit or explicit contract for long-term employment (Polivka and 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 that may affect the level of employee solidarity are used in the study. **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. To examine the effect of *organizational level*, dummy variables are added for each organization.

Results of Study 1

First correlation coefficients among all variables are calculated. 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 ($r = .14$, $p < .01$). 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. Learning and control refer to the length of the relationship combined with the behavior of the co-worker. In the survey no questions were asked about the experiences that employees have with their co-workers. Instead, we use an interaction term combining past with co-workers with solidarity from co-workers as a proxy for learning from past experiences. Control 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. To reduce multicollinearity, the variables are centered (Aiken and 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, we test the two hypotheses investigating the effects of the interaction terms. Table 1 shows the results of the regression analyses.

Table 1 about here

Model 1 includes the statistical control variables and the level of solidarity from co-workers on solidarity toward co-workers and has an explained variance of 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 ($b = .07, p < .05$). As was stated in hypothesis 1, the relation between the length of the past with co-workers and solidarity toward co-workers is moderated by the solidarity from 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 2. Solidarity toward co-workers is high when there is a high level of solidarity from co-workers and the combination of solidarity from co-workers with the expectation

that the relationship will continue is associated with higher levels of solidarity toward co-workers.

STUDY 2: VIGNETTE STUDY

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.

Procedure

The second study is based on data from a vignette study (Nosanchuk, 1972; Alexander and Becker, 1978; Sniderman and 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 and 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 respondents get one of the following pieces of information concerning the past with Smith: (1) Smith did not provide help in the past; (2) Smith has not been a co-worker for a very long time; and (3) Smith did provide help in the past. The future was varied with providing the information that Smith will leave the organization within a month or that Smith and the respondent will work together for at least a year. Altogether, this leads to six different vignettes describing the past and future 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 and Raudenbush, 1992; Snijder and 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.

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

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’). In study 2 we used the same variable to measure *temporal employment relationships* as in study 1.

Statistical control variables

To compare the outcomes of the two studies, the same statistical control variables – autonomy, size of the team, gender, and organizational dummies – are used in study 2 as in study 1.

Results of study 2

The two hypotheses are investigated in three steps using multilevel analysis. 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 2.

Table 2 about here

According to the results in Table 2, there are two of the statistical control variables affect 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. In model 2 hypothesis 1 is tested. 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 1; the intention to help the co-worker depends on the behavior that the co-worker has shown in the past. Hypothesis 2 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 a common future has a small 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 the employees does increase the employee's intention to help the co-worker, irrespective of the past behavior of the co-worker.

DISCUSSION AND CONCLUSIONS

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, such an

approach does not include the quality of the relationships among employee. According to the two studies, permanent and temporary workers do not differ in their solidarity toward co-workers. Instead, solidarity of employees depends on temporal embeddedness. This finding contributes to the research on temporary employment relationships that can benefit from this result by including temporal embeddedness in future analysis.

Two datasets are used to examine the theoretical model. The effects of future interactions between employees are not completely the same in the two studies. A possible explanation for this may be that people deal differently with their future with others. There is little or no uncertainty about the behavior that others have shown in the past. 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. 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.

The findings have several practical implications. First, the studies presented here, show that the kind of contract that employees have does not affect their solidarity toward co-workers. Therefore, that managers have the opportunity to 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. 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.

The outcomes of two studies provide possibilities for future research. A first limitation of this article deals with the scope of the conclusions. The findings may seem to suggest 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. Such data 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 concerns 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 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. Moreover, 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. Finally, investigating how supervisor behavior or the overall company strategy affects the dynamics and solidarity relationships within teams could extend the analyses even further.

REFERENCES

- Aiken, L. and West, S. (1991) *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage.
- Alexander, C.S. and Becker, H.J. (1978) 'The Use of Vignettes in Survey Research', *Public Opinion Quarterly*, 42: 93-104.
- Allen, P. (2002) 'The Contingent Workforce: Challenges and New Directions', *American Business Review*, June: 103-110.
- Autor, D.H., Levy, F. and Murnane, R.J. (1999) *Skills Training in the Temporary Help Sector: Employer Motivations and Worker Impacts*. Cambridge: MIT.
- Axelrod, R. (1984) *The Evolution of Cooperation*. New York: Basic Books.
- Barnard, C.I. (1938) *The Functions of the Executive*. Cambridge: Harvard University Press.
- Batenburg, R., Raub, W. and Snijders, C. (2003) 'Contacts and Contracts: Dyadic Embeddedness and the Contractual Behavior of Firms'. In Buskens, V., Raub, W. and Snijders, C. (eds), *The Governance of Relations in Markets and Organizations, Research in the Sociology of Organizations*. Oxford: JAI/Elsevier.
- Beard, K.M. and Edwards, J.R. (1995) 'Employees at Risk: Contingent Work and the Psychological Experience of Contingent Work'. In Cooper, C.L. and Rousseau, D.M. (eds) *Trends in Organizational Behavior*. New York: Wiley.
- Belous, R.S. (1989) 'How Human Resource Systems Adjust to the Shift Toward Contingent Workers', *Monthly Labor Review*, March: 7-12.
- Benson, J. (1995) 'Future Employment and the Internal Labour Market', *British Journal of Industrial Relations*, 4: 603-608.

- Booth, A.L., Francesconi, M., J.J. and Frank, J. (2002) 'Temporary Jobs: Stepping Stones or Dead Ends?', *The Economic Journal*, 112: F189-F213.
- Borman, W.C. and Motowidlo, S.J. (1993) 'Expanding the Criterion Domain to Include Elements of Contextual Performance'. In Schmitt, N. and Borman, W.C. (eds) *Personnel selection*. San Francisco: Josey-Bass.
- Brief, A.P. and Motowidlo, S.J. (1986) 'Prosocial Organizational Behaviors', *Academy of Management Review*, 11: 710-725.
- Bryk, A.S. and Raudenbush, S.W. (1992) *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, CA: Sage Publications.
- Buskens, V. (2002) *Social Networks and Trust*. Boston: Kluwer.
- Buskens, V. and Raub, W. (2002) 'Embedded Trust: Control and Learning'. In Lawler, E.J. and Thye, S.R. (eds), *Advances in Group Processes*. Amsterdam: JAI/Elsevier.
- Byoung-Hoon, L. and Frenkel, S.J. (2004) 'Divided Workers: Social Relations Between Contract and Regular Workers in a Korean Auto Company', *Work Employment Society*, 18: 507-530.
- Campbell, D.T. and Fiske, D.W. (1959) 'Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix', *Psychological Bulletin*, 56: 81-105.
- Capelli, P. (1999) *The New Deal at Work: Managing the Market-based Employment Relationship*. Boston: Harvard Business School Press.
- Cohen, S.G. and Bailey, D.E. (1997) 'What Makes Teams Work: Group Effectiveness Research from the Shop Floor to the Executive Suite', *Journal of Management*, 23: 239-290.

- Coleman, J.S. (1990) *Foundations of Social Theory*. Cambridge, MA: Harvard University Press.
- Dasgupta, P. (1988) 'Trust as a Commodity', In Gambetta, D. (ed), *Trust: Making and Breaking Cooperative Relations*. Oxford: Blackwell.
- Davis-Blake, A. and Uzzi, B. (1993) 'Determinants of Employment Externalization: A Study of Temporary Workers and Independent Contractors', *Administrative Science Quarterly*, 38: 195-223.
- Denzin, N.K. (1978) *The Research Act: A Theoretical Introduction to Sociological Methods*. New York: McGraw Hill.
- Feldman, D.C., Doeringhaus, H.I. and Turnley, W.H. (1995) 'Employee Reactions to Temporary Jobs', *Journal of Managerial Issues*, 7: 127-141.
- Goudswaard, A. and Batenburg, R.S. (2000) 'De Flexibiliteit van Nederlandse Bedrijven. Strategieën en Determinanten [Flexibility of Dutch Companies. Strategies and Determinants]', *Bedrijfskunde*, 72: 10-19.
- Granovetter, M.S. (1985) 'Economic Action and Social Structure: The Problem of Embeddedness', *American Journal of Sociology*, 91: 481-510.
- Hinds, P.J., Carley, K.M., Krackhardt, D. and Wholey, D. (2000) 'Choosing Work Group Members: Balancing Similarity, Competence, and Familiarity', *Organizational Behavior and Human Decision Processes*, 81: 226-251.
- Hogan, S. and Ragan, C. (1995) 'Employment Adjustment Versus Hours Adjustment: Is Job Security Desirable?', *Economica*, 62: 495-505.

- Houseman, S.N. (2001) 'Why Employers Use Flexible Staffing Arrangements: Evidence From an Establishment Survey', *Industrial and Labor Relations Review*, 55: 149-170.
- Howe, W.J. (1986) 'Temporary Help Workers: Who They Are, What Jobs They Hold', *Monthly Labor Review*, November: 45-47.
- Ichino, A., Mealli, F. and Nannicini, T. (2004) *Temporary Work Agencies in Italy: A Springboard toward Permanent Employment?* European University Institute.
- Janssens, M. and Brett, J.M. (1994) 'Coordinating Global Companies: The Effects of Electronic Communication, Organizational Commitment, and a Multi-cultural Managerial Workforce'. In Cooper, C.L. and Rousseau, D.M. (eds) *Trends in Organizational Behavior*. New York, NY: John Wiley and Sons.
- Jick, T.D. (1979) 'Mixing Qualitative and Quantitative Methods: Triangulation in Action', *Administrative Science Quarterly*, 24: 602-611.
- Kochan, T.A., Smith, M., Wells, J.C. and Rebitzer, J.B. (1994) 'Human Resource Strategies and Contingent Workers: The Case of Safety and Health in the Petrochemical Industry', *Human Resource Management*, 1: 55-77.
- Koh, W.L. and Yer, L.K. (2000) 'The Impact of the Employee-Organization Relationship on Temporary Employees' Performance and Attitude: Testing a Singaporean Sample', *International Journal of Human Resource Management*, 11: 366-387.
- Kvasnicka, M. (2005) 'Does Temporary Agency Work Provide a Stepping Stone to Regular Employment?', SFB 649 Discussion Paper 2005-031.

- Lambooi, M., Sanders, K., Koster, F., Van Emmerik, I.J.H., Raub, W., Flache, A. and Wittek, R.P.M. (2003) 'Verantwoording Vragenlijst 'Solidarity at Work' [Questionnaire 'Solidarity at Work']', *Solidarity at Work Paper*, 28: 1-58.
- Lindenberg, S. (1998) 'Solidarity: Its Microfoundations and Macro-dependence. A framing approach'. In Doreian, P. and Fararo, T.J. (eds) *The problem of solidarity: Theories and models*. Amsterdam: Gordon and Breach.
- Mangum, G., Mayall, D. and Nelson, K. (1985) 'The Temporary Help Industry: A Response to the Dual Internal Labor Market', *Industrial and Labor Relations Review*, 38: 599-611.
- Masters, J.K. and Miles, G. (2002) 'Predicting the Use of External Labor Arrangements', *Academy of Management Journal*, 2: 431-442.
- Matusik, S.F. and Hill, C.W.L. (1998) 'The Utilization of Contingent Work, Knowledge Creation and Competitive Advantage', *Academy of Management Review*, 23: 680-697.
- Miles, R.E. and Snow, C.C. (1995) 'The New Network Firm: A Spherical Structure Built on a Human Investment Philosophy', *Organizational Dynamics*, 4: 4-18.
- Miller, G.J. (1992) *Managerial Dilemmas: The Political Economy of Hierarchy*. Cambridge, MA: Cambridge University Press.
- Moorman, R.H. and Harland, L.K. (2002) 'Temporary Employees as Good Citizens: Factors Influencing Their OCB Performance', *Journal of Business and Psychology*, 17: 171-187.
- Murnighan, J. K. (1994) 'Game Theory and Organizational Behavior'. In Staw, B.M. and Cummings, L.L. (eds) *Research in Organizational Behavior*. Greenwich: JAI Press.

- Nollen, S.D. and Axel, H.A. (1996) *Managing Contingent Workers*. New York: AMACOM.
- Nosanchuk, T.A. (1972) 'The Vignette as an Experimental Approach to the Study of Social Status: An Exploratory Study', *Social Science Research*, 1: 107-120.
- Organ, D.W. (1988) *Organizational Citizenship Behavior: The Good Soldier Syndrome*. Lexington, MA: Lexington Books.
- Organ, D.W. and Paine, J.B. (2000) 'Contingent and Marginal Employment, Commitment, and Discretionary contributions'. In Hodson, R. (ed) *Research in the Sociology of Work*. Stamford, CT: JAI Press.
- Paoli, P. and Merrlie, D. (2001) *Third European Survey on Working Conditions 2000*. Dublin: Eurofoundation.
- Parker, S.K., Griffin, M.A., Sprigg, C.A. and Wall, T.D. (2002) 'Effect of Temporary Contracts on Perceived Work Characteristics and Job Strain: A Longitudinal Study', *Personnel Psychology*, 55: 689-719.
- Pearce, J.L. (1993) 'Toward an Organizational Behavior of Contract Laborers: Their Psychological Involvement and Effects on Employee Co-workers', *Academy of Management Journal*, 5: 1082-1096.
- Pfeffer, J. and Baron, J.N. (1988) 'Taking the Workers Back Out: Recent Trends in the Structuring of Employment'. In Staw, B.M. and Cummings, L.L. (eds) *Research in Organizational Behavior*. Greenwich, CT: JAI Press.
- Pfeffer, J. (1994) 'Competitive Advantage Through People', *California Management Review*, 2: 9-28.

- Polivka, A.E. and Nardone, T. (1989) 'On the Definition of "Contingent Work"', *Monthly Labor Review*, December: 9-15.
- Raub, W. and Weesie, J. (2000) 'The Management of Durable Relations', In Weesie, J. and Raub, W. (eds) *The Management of Durable Relations*. Amsterdam: Thela Thesis.
- Raub, W. (1997) *Samenwerking in Duurzame Relaties en Sociale Cohesie [Cooperation in Long-term Relationships and Social Cohesiveness]*. Amsterdam: Thela/Thesis.
- Rholes, W.S., Newman, L.S. and Ruble, D.N. (1990) 'Understanding Self and Other: Developmental and Motivational Aspects of Perceiving Others in Terms of Invariant Dispositions'. In Higgins, E.T. and Sorrentino, R. (eds) *Handbook of Motivation and Cognition: Foundations of Social Behavior: Vol. II*. New York: Guilford Press.
- Rooks, G., Raub, W., Selten, R. and Tazelaar, F. (2000) 'How Inter-Firm Cooperation Depends on Social Embeddedness: A Vignette Study', *Acta Sociologica. Journal of the Scandinavian Sociological Association*, 43: 123-138.
- Sanders, K. (2000) *Solidair Gedrag Binnen Moderne Arbeidsorganisaties [Solidary Behavior within Modern Organizations]*. Dutch University Press.
- Sanders, K. (2004) 'Playing Truant within Organizations: Informal Relationships, Work Ethics and Absenteeism', *Journal of Managerial Psychology*, 19: 136-155.
- Scandura, T.A. and Williams, E.A. (2000) 'Research Methodology in Management: Current Practices, Trends, and Implications for Future Research', *Academy of Management Journal*, 6: 1248-1264.

- Sherer, P.S. (1996) 'Toward an Understanding of the Variety in Work Arrangements: The Organization and Labor Relationship Frameworks'. In Cooper, C.L. and Rousseau, D.M. (eds), *Trends in Organizational Behavior*. New York: John Wiley.
- Smith, K.G., Carroll, S. and Ashford, S. (1995) 'Intra- and Interorganizational Cooperation: Toward a Research Agenda', *Academy of Management Journal*, 38: 7-23.
- Sniderman, P.M. and Grob, D.B. (1996) 'Innovations in Experimental Design in Attitude Surveys', *Annual Review of Sociology*, 22: 377-99.
- Snijders, T.A.B. and Bosker, R.J. (1999) *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*. London: Sage.
- Spicer, M.W. (1985) 'A Public Choice Approach to Motivating People in Bureaucratic Organizations', *Academy of Management Review*, 10: 518-527.
- Storrie, D. (2002) *Temporary agency work in the European Union*. Dublin: Eurofound.
- Tan, H.H. and Tan, C.P. (2002) 'Temporary Employees in Singapore: What Drives Them?', *The Journal of Psychology*, 1: 83-102.
- Tsui, A.S., Pearce, J.L., Porter, L.W. and Hite, J. P. (1995) 'Choice of Employee-Organization Relationship: Influence of External and Internal Organizational Factors'. In Ferris, G.R. (ed) *Research in Personnel and Human Resources Management*. Greenwich: JAI Press.
- Tsui, A.S., Pearce, J.L., Porter, L.W. and Tripoli, A.M. (1997) 'Alternative Approaches to the Employee-Organization Relationship: Does Investment in Employees Pay Off?', *Academy of Management Journal*, 40: 1089-1121.

- Van Dyne, L. and Ang, S. (1998) 'Organizational Citizenship Behavior of Contingent Workers in Singapore', *Academy of Management Journal*, 41: 692-703.
- Von Hippel, C., Mangum, S.L., Greenberger, D.B., Heneman, R.L. and Skoglund, J.D. (1997) 'Temporary Employment: Can Organizations and Employees Both Win?', *Academy of Management Executive*, 11: 93-104.
- Weesie, J., Buskens, V. and Raub, W. (1998) 'The Management of Trust Relations via Institutional and Structural Embeddedness'. In Doreian, P. and Fararo, T.J. (eds) *The Problem of Solidarity: Theories and Models*. Amsterdam: Gordon and Breach.

TABLE 1

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

TABLE 2

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 (8)*	183.67 (2)**	8.61 (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