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ORGANIZATIONAL CONTEXT AND MULTITASKING BEHAVIORS: A MIXED- METHOD STUDY

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Organizational Context and Multitasking Behaviors: a mixed-method study

Complete Research

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Abstract

This paper investigates how individual perceptions and attitudes about an organization influence multitasking behaviors in the workplace. While we know that individuals' behaviors are influenced by the characteristics of their organizations (e.g., ICTs, physical layout), we still do not know much about how the way individuals interpret their organization influences their multitasking behaviors. We first hypothesize that individual perceptions of organizational preferences for multitasking (i.e. organizational polychronicity) have impacts on actually enacted multitasking behaviors. We also hypothesize that the attachment to the organization (i.e. organizational identification) moderates the above relationship. We conducted a mixed method study in two knowledge intensive organizations and collected data through a survey, diaries, and semi-structured interviews. Our findings support the first hypothesis but not the moderating role of organizational identification. However, this latter seems to be directly related on how much a person is willing to work on different activities, but not on how much she interrupts others or accepts being interrupted. Further, our study suggests that not only the organizational context should be investigated in the study of multitasking behaviors, but also the larger work context, including the individuals' professional communities.

Keywords: organizational polychronicity, organizational identification, multitasking, knowledge intensive work

1. Introduction

Multitasking is becoming increasingly common in the modern workplace. Supported by the intensive use of collaborative technology, individuals move more and more between different tasks, activities, and projects within the same day and are increasingly interrupted by the requests of their colleagues (e.g. through email, IM and other technologies). The literature on multitasking and interruptions has significantly furthered our understanding on how individuals behave in multitasking environments (e.g. Salvucci and Taagen, 2010) and react to interruptions (e.g. Grandhi and Jones, 2010; Trafton and Monk, 2008), on the antecedents of individual behaviors and management strategies (e.g. Mark, Volda and Cardello, 2012), and on the consequences in terms of individual psychological states as well as group outcomes, such as individual overload (e.g. Wickens, 2008) or coordination (e.g. Perlow, 1999). However, a significant amount of this research, conducted in diversified fields (e.g. in human computer interaction and IS) takes place in laboratory settings or has overlooked the role of the workplace context in the understanding of multitasking and interruptions and, in particular, has left us with a lot of questions on how organizations influence their employees' multitasking behaviors. Among the notable exceptions, we find the seminal work by Perlow (1999) that shows how organizational norms regarding time use influence the organizational members interrupting behaviors, and the work by Dabbish et al. (2011) that shows how the organizational environment influences self-interruptions. The works in this line of research (see also Harr and Kaptelinin, 2007) started to uncover the role of organizational environments, but largely overlook the importance that the individuals' perceptions of the organizational context have in conditioning the way they work. As individuals attend to organizational demands in order to be positively evaluated and accepted by coworkers and organizational members at large (Blount and Leroy, 2007), the developing of a more profound understanding of how individual multitasking behaviors are embedded in the interpretation of the organizational work context is of both theoretical and practical importance.

The aim of this paper is to explore how the individuals' interpretation of and their attachment to the organizational context influence individual multitasking behaviors. In modern fast pace environment, the management of temporal issues is of paramount importance for organizations (Ancona et al., 2001). We argue that the organizational polychronicity, or the individual members' perception of the organization's demands in terms of multitasking (Slocombe and Bluedorn, 1999), plays a prominent role because it refers to perceived organizational preferences about sequencing activities and reflects how organizations prefer to allocate a precious resource of their members, that is their work time (Soutaris and Maestro, 2010).

Building on research on time and polychronicity (Hall, 1989; Kaufman-Scarborough and Lindquist, 1999) and on interruptions and multitasking (e.g. Salvucci and Taagen, 2010; Trafton and Monk, 2008) we argue that individuals who perceive their organization as more polychronic will engage in more multitasking behaviors. Also, building on social identity and organizational identification theories (e.g. Ashforth and Mael 1989, Dutton, Dukerich and Harquail, 1994) we propose that the strength of organizational identification will positively moderate the above relationship. Individuals highly identified with their organization see the organization's attributes as self-defining and should thus try harder to engage in behaviors aligned with organization's requests.

Focus of this analysis are two organizations that are devoted to research and development: a university department and the R&D unit of an organization that operates in the alternative energy industry. We collected data through structured surveys, the recording of diary data and qualitative semi-structured interviews.

2. Theoretical background and hypotheses development

2.1. Organizations and multitasking

The studies that specifically investigated the interplay between the organizational context and multitasking behaviors are still limited (Harr and Kaptelinin, 2007). Some studies, especially in the organizational behavior and management fields looked at the consequences of multitasking behaviors and interruption management strategies for work groups and organizations (e.g. Perlow, 1999; Wickens, 2008). For instance Perlow finds that individuals experience a vicious work-time cycle with negative implications for the overall organizational performance. Other studies have found that extreme multitasking behavior is associated with delayed completion of tasks, higher frequency of errors, lower ability to think creatively, and worse decision making (Appelbaum et al., 2008; Gendreau, 2007).

On the other hand, other works underline the positive organizational outcomes of multitasking, e.g. interruptions of work activities may increase knowledge transfer effort and knowledge transfer acquisition within work groups and that knowledge transfer effort is a mediating variable between interruptions and knowledge acquisition (Zellmer-Bruhn, 2003). Also Mark and colleagues (2005) find that a task switching within the same “working sphere” (i.e. unit of work) yields a beneficial effect, while when the switch entails a context change its effects are disruptive.

If we move from the organizational outcomes to the organizational antecedents of multitasking behaviors, we find that the studies that investigated how the organizational context and characteristics influence multitasking have looked at the role of coworkers, the physical office layout, work allocation, ICTs, organizational structure, and organizational norms. In relation to the role of colleagues, Gonzalez and Mark (2004) and Harr and Kaptelinin (2007) observe that individuals shift frequently between tasks because of coworkers’ requests. Consistently with Dabbish et al. (2011), Harr and Kaptelinin (2007) propose that the physical characteristics of the location where an individual is based impact on interruptions and multitasking behaviors. Recently, O’Leary et al. (2011) suggest that the practice of allocating professionals on multiple teams simultaneously engenders a high number of interruptions and extreme multitasking behaviors. Other authors (Appelbaum et al., 2008; Harr and Kaptelinin, 2007) underscore how flat organizational structures and the intense use of ICTs in organizations increase the number of interruptions in the workplace and multitasking behaviors. Finally, Perlow (1999) shows how the individual perceptions of organizational norms regarding time use influence organizational members interrupting behaviors.

The latter work suggests that not only organizational features matter in defining multitasking behaviors, but also that individual perceptions of what the organization considers acceptable, promotes and values, play a prominent role. However, we are not aware of other works that further explore this issue. Thus, the focus of our work is on how the way individuals make sense of their organizations influences their multitasking behaviors. Among the different variables that link individuals to their organization here we focus on organizational polychronicity and organizational identification.

2.2. The relationship between organizational polychronicity and multitasking behaviors

It is common knowledge that, when performing multiple tasks, some professionals focus on one task at a time whereas others are simultaneously involved in two or more activities, or, in other words, like to do many things at once. The former approach to time use is ‘monochronic’, while the latter is ‘polychronic’ (Hall, 1990; Bluedorn et al., 1992; Kaufman-Scarborough and Lindquist, 1999). Bluedorn et al. (1999) defined polychronicity in organizational contexts as the extent to which people (1) prefer to be engaged in two or more tasks simultaneously; and (2) believe their preference is the best way to do things. The term ‘simultaneously’ can be

applied both to situations in which a person, involved in multiple projects (say A, B, and C), enacts an “intermittent pattern – resume A from a previous time, stop A and begin B, stop B and begin A, stop A and begin C, stop C and return to A” (Bluedorn, et al., 1992: 17) and to a person who “is writing a letter, talking on the phone, eating an apple, and listening to the War of 1812 Overture” at once (Bluedorn, et al., 1992: 18).

Research has shown that polychronicity is a component of organizational culture and identity and that organizations also have time use orientations (Bluedorn, et al, 1992). The perception of organizational polychronicity, proposed by Slocombe and Bluedorn (1999), is a measure of how individuals feel about the organization’s polychronicity, which is based on what they are asked to do in the organization.

Since individuals strive for congruence between their meaning of work and what they do in organizations (Wrzesniewski and Dutton, 2001), we expect that what individuals perceive the organization asks them to do, i.e. the perceived organization’s polychronicity, strongly drives their multitasking. Thus, we hypothesize that the perception of organizational polychronicity is positively related to multitasking behaviors.

H1: Individual perceptions of organizational polychronicity will be positively related to individual multitasking behaviors in organizations.

2.3. The moderating role of organizational identification on the relationship between organizational polychronicity and multitasking behaviors

Organizational identification has been defined as a process of self-definition which is said to occur “when an individual’s beliefs about the organization becomes self-referential or self-defining” (Pratt, 1998: 172). The level of identification indicates the extent to which individuals feel a cognitive connection with their organization, and integrate into their self-concepts the same attributes as those of the perceived organizational identity (Ashforth and Mael, 1989; Dutton et al., 1994). It is also known from the literature that, for instance, high levels of identification influence tenure intention (O’Reilly and Chatman, 1986), intense loyalty (Adler and Adler, 1988), commitment (Bergami and Bagozzi, 2000; Foreman and Whetten, 2002), work effort (Bartel, 2001). Organizational identification also drives individuals to comply with organizational dictates and to engage in on-the-job decision-making processes and sense-making activities in ways that favor the organization or that are aligned with organizational culture (Simon, 1976; Cheney, 1983; Pratt, 2000). For instance, individuals highly identified with their organization are willing to engage in personally costly behaviors (Ashforth et al., 2008). Therefore, we can expect that strongly identified individuals will try hard to be responsive to their perceptions of the organization’s requirements and make choices in terms of multitasking behaviors accordingly. That is, the relationship between perceptions of the organization’s polychronicity and multitasking will be stronger for those individuals highly identified with their work organization than for those who are not so highly identified. Thus, we propose the following:

H2: The strength of organizational identification moderates the relationship between the perceptions of the organization’s polychronicity and multitasking behaviors; the higher the organizational identification, the stronger the relationship between the perceptions of organizational polychronicity and multitasking behaviors.

3. Data and Methods

We conducted a mixed methods study in two organizations: Re.Search and DoE. Our study was composed of two methods: a quantitative method to test our hypotheses and a qualitative method involving detailed exploration through interviews and diaries. The different methods, mixed with complementarity purposes (Greene et al., 1989), gave interesting and reciprocally

corroborating insights: where the quantitative analyses gave measure of the strength of the interplays between variables, qualitative ones helped to explain and give a more profound meaning to those interplays.

We conducted our study in a mechatronic company and in a University Department. We chose these organizations because, for knowledge professionals, issues related to multitasking are of particular relevance (Appelbaum et al., 2008). In addition, both research sites were willing to offer access to a variety of sources of data on work structure and time allocation, action and interactions patterns.

Re.Search is a medium sized division of a world-leading business operating in the alternative energy industry and headquartered in Italy. Here engineers (mechanical, electronic, mechatronic, electrical, and industrial) and technicians work on different projects simultaneously. Each project is devoted to creating a subsystem for a specific client (an OEM – Original Equipment Manufacturer) or for final customers (an After Market solution) and on average lasts 13 months. Engineers and technicians work on both types of projects. When we collected our data there were 40 active projects.

Doe (Department of Engineering) is a department of a major Italian University in Northern Italy, composed of 88 individuals (including permanent and temporary workers). The Department defines itself primarily as a research institution, and is characterized by great multidisciplinary of its faculty members and staff. During the last evaluation of the quality of scientific productivity undertaken by the Italian Ministry of Education, DoE ranked 30th out of 120 Engineering Departments.

3.1. Data collection

3.1.1. Survey

The questionnaire we developed consisted of several established scales measuring relevant variables. We assured respondents confidentiality, and they were asked to return their completed questionnaires directly to us. In Re.Search, since top management approved and supported the study, all of the 83 R&D unit members returned the questionnaire for a 100% response rate. Because of some missing data, the usable questionnaires that were included in the analysis were 71. Here, 70 of the 71 respondents were male; their average age was 34 years (s.d.= 7.3) and they had worked with the organization for an average of 5 years (s.d.= 5.5); and their professional tenure was 11 years (s.d.= 9.34).

In DoE, we administered the questionnaire via the Internet to all 81 research employees (administrative people are not included in the study). After one month and two reminders, 71 questionnaires were returned and usable (response rate= 87.6%). Forty-nine respondents were male. Their average age was 35 years (s.d.= 8.7 years). They had worked at the University for an average of 8 years (s.d.= 5.2). With regard to their position within the Department, 10 were Full Professors, 12 were Associate Professors, 15 were Assistant Professors, 16 were PhD students, and 18 were contract workers employed on specific research projects.

3.1.2. Diaries

In order to collect diary data, we asked our informants to record every phenomenon, such as events and interactions, taking place during a specific workday according to a chronological pattern and to detail its characteristics (time length, un/expectedness, effects).

We used diary data to build measures of multitasking behaviors and individuals' time management and interaction practices. The format of the journals is partially inspired by Perlow's (1999) own diary format.

3.1.3. Interviews

The second step of this study consisted in conducting interviews. This evidence aided in further interpreting the results. In Re.Search we conducted 6 preliminary interviews and 10 follow up open-ended interviews (Gubrium and Holstein, 2003). In DoE, we conducted 7 interviews. Each interview lasted between 1 and 1.5 hours.

3.2 Measures and reliability

3.2.1 The perception of the organization's polychronicity

We measured the extent to which the organization was perceived to be polychronic employing the 5 item Monochronic/Polychronic Orientation scale (Bluedorn, Kaufman and Lane, 1992). Each item was scored on a 7-point Likert scale with 7= strongly agree and 1= strongly disagree (Cronbach's alpha= 0.75).

3.2.2. Multitasking Behaviors

In order to capture the multiple facets of multitasking behaviors we computed different measures from diary logs. First, we computed the number of different activities a person works on during a day (named 'multitasking'). We computed the number of activities that the individual labels as unexpected as a proxy of the number of interruptions received in a day ('interruptions'). We also computed the number of times an individual switches between an expected and an unexpected activity or vice versa ('expected/unexpected'). This latter measure reflects if a person sequences his/her work activities into clearly separated 'chunks' of expected and unexpected work or if she prefers to intertwine expected and unexpected activities. We computed the rate of the number of unexpected activities over the total amount of daily activities ('unexpected rate'). Finally, we computed the rate of the time spent in unexpected activities over the total amount of daily activities time ('unexpected time rate').

3.2.3. Organizational Identification

To measure the strength of organizational identification we used the organizational identification scale proposed by Mael and Ashforth (1992) that consists of 6 items. We asked respondents to indicate, on a 7-point Likert scale, the level of agreement with each item. The reliability of the scale as assessed by Cronbach's alpha was 0.86.

3.2.4. Control variables

We controlled for organizational position, nationality, temporary/permanent employment, and organization. In Re.Search position was coded as a three level variable (0= respondent does not supervise anyone; 1= respondent supervises some coworkers, 2= respondent is a formal manager of an organizational unit). This classification parallels that of DoE, where position was coded as 0= PhD student/research assistant; 1= assistant professor, 2= tenured professor. We coded nationality as 1 for Italians and 0 for other nationalities. We coded the temporary/permanent related variable, that we named 'permanent', as 1= permanent; 0= temporary. Finally, we controlled for the organization individuals belong to with a dummy variable (1= Re.Search and 0= DoE).

3.3. Qualitative data analysis

The interviews were transcribed and then coded using the coding techniques described by Miles and Huberman (1994). Categories definition came from similar statements and from extant literature. We also performed an axial coding (Strauss and Corbin, 1998) by connecting the categories. In this way, we looked for support for and explanation of our hypotheses. Disagreements were set through discussion.

4. Results

4.1. Quantitative analysis

Table 1 presents a comparison of means and standard deviations of variables in this study across the different organizational settings. Table 2 shows a correlation matrix and descriptive statistics for all the measured variables. Organizational Polychronicity positively correlates to position ($\beta = .24$, $p < 0,01$), nationality ($\beta = .18$, $p < 0,05$), multitasking ($\beta = .27$, $p < 0,01$), interruptions ($\beta = .31$, $p < 0,01$), expected/unexpected ($\beta = .24$, $p < 0,01$) and unexpected rate ($\beta = .25$, $p < 0,01$). It shows a negative correlation with organization ($\beta = -.19$, $p < 0,05$).

Table 3 reports the analyses for the relationship between Organizational Polychronicity and dependent variables and for the moderating effect of Organizational Identification. We used the variance inflation factor (VIF) to assess multicollinearity. VIF scores were lower than 3.5, indicating that multicollinearity was not a problem. Hypotheses were tested via multiple regression analysis (Aiken and West, 1991). We tested Hypothesis 1, concerning the effect of Organizational Polychronicity on Multitasking Behaviors, by regressing outcomes on Organizational Polychronicity while controlling for organizational position, nationality, temporary/permanent employment, and organization (model 1). Hypothesis 2, concerning the moderating effect of Organizational Identification, was tested in a separate moderated regression model, specifically model 2. We present results in Table 3.

With regard to the control variables, role was significantly and positively related to two out of the five multitasking-behaviors variables (respectively interruptions and expected/unexpected) and marginally significant on multitasking. The variable organization was significantly and positively related to all our dependent variables although its effect on the specific dependent variable multitasking weakened and became only marginally significant when the moderating variable was entered.

Organizational Polychronicity showed to have a positive and significant effect on all Multitasking Behaviors. Specifically, Organizational Polychronicity has a positive and significant effect on multitasking ($\beta = .49$, $p < 0,05$). Its effect on both interruptions and expected/unexpected is also positive (respectively $\beta = .42$, $p < 0,001$ and $\beta = .32$, $p < 0,05$). Organizational Polychronicity is positive on both unexpected rate and unexpected time rate too (respectively $\beta = .08$, $p < 0,001$ and $\beta = .05$, $p < 0,05$). These findings support Hypothesis 1.

Table 3 shows moderating effects of Organizational Identification for each multitasking behavior. Contrary to our Hypothesis 2, Organizational Identification does not moderate the effect of Organizational Polychronicity on Multitasking Behaviors. In only one case, i.e. multitasking, Organizational Identification shows a direct, positive and significant effect. Hypothesis 2 is, thus, not supported.

As above detailed, the Organization dummy variable is significant for all the multitasking variables. We performed an additional ANOVA analysis of the means' differences for each multitasking behavior measures across the two organizations (see Table 1). The results suggest that members in Re.Search and DoE show a similar pattern regarding the average number of different activities they engage in a workday (i.e. multitasking) and the number of times individuals move from expected to unexpected activities or vice versa (i.e. expected/unexpected). However, employees in DoE are significantly lower in terms of number of unexpected events that they attend in a workday (i.e. interruptions), the rate of the number of unexpected activities over the total amount of daily activities (i.e. unexpected rate), and the rate of the time spent in unexpected activities over the total amount of daily activities time (i.e. time rate).

Our qualitative data helped us to better understand those differences and the non-significance of our second hypothesis.

| Organizational | Multitasking | Interruptions | Expected / Unexpected | Unexpected Rate | Unexpected Time Rate | Organizational Polychronicity | Organizational Identification |
|--------------------|-----------------|-------------------|-----------------------|-------------------|----------------------|-------------------------------|-------------------------------|
| DoE | 4,22 (2,11) | 0,98 (0,91) | 1,35 (1,37) | 0,22 (0,18) | 0,10 (0,12) | 5,03 (0,92) | 5,06 (0,98) |
| Re.Search | 4,48 (2,33) | 1,73 (1,66) | 1,48 (1,71) | 0,36 (0,31) | 0,32 (0,31) | 4,59 (1,29) | 5,61 (0,86) |
| F statistic | F(1,120) = 0,41 | F(1,115) = 8,39** | F(1,114) = 0,18 | F(1,114) = 8,34** | F(1,107) = 24,11*** | F(1,129) = 4,66* | F(1,129) = 11,75*** |

Standard deviations are in parentheses.

* p < 0,05

** p < 0,01

*** p < 0,001

Table 1 Means differences across organizations

| Variable | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------------------|------|------|---------|---------|--------|--------|--------|-------|--------|--------|--------|--------|
| 1 Position | 0,59 | 0,78 | | | | | | | | | | |
| 2 Nationality | 0,92 | 0,28 | 0,05 | | | | | | | | | |
| 3 Permanent | 0,80 | 0,40 | 0,38** | -0,14 | | | | | | | | |
| 4 Organization | 0,52 | 0,50 | -0,35** | -0,23** | 0,53** | | | | | | | |
| 5 Organizational Polychronicity | 4,82 | 1,13 | 0,24** | 0,18* | 0,02 | -0,19* | | | | | | |
| 6 Organizational Identification | 5,35 | 0,96 | -0,09 | -0,18* | 0,17* | 0,29** | -0,06 | | | | | |
| 7 Multitasking | 4,36 | 2,23 | 0,16 | 0,03 | 0,12 | 0,06 | 0,27** | 0,18* | | | | |
| 8 Interruptions | 1,40 | 1,43 | 0,09 | -0,10 | 0,21* | 0,26** | 0,31** | 0,13 | 0,69** | | | |
| 9 Expected / Unexpected | 1,42 | 1,56 | 0,20* | 0,00 | 0,09 | 0,04 | 0,24** | 0,10 | 0,77** | 0,75** | | |
| 10 Unexpected Rate | 0,30 | 0,27 | 0,02 | -0,17 | 0,18 | 0,26** | 0,25** | 0,11 | 0,20* | 0,74** | 0,39** | |
| 11 Unexpected Time Rate | 0,22 | 0,26 | -0,04 | -0,25** | 0,28** | 0,43** | 0,11 | 0,22* | 0,20* | 0,67** | 0,28** | 0,88** |

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 Descriptives and Correlations

| | Multitasking | | Interruptions | | Expected / Unexpected | | Unexpected Rate | | Unexpected Time Rate | |
|------------------------|--------------|---------|---------------|---------|-----------------------|---------|-----------------|---------|----------------------|---------|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| (Constant) | -0,58 | -0,62 | -0,12 | -0,14 | 0,05 | 0,08 | 0,06 | 0,05 | 0,01 | 0,01 |
| Position | 0,79† | 0,75† | 0,52* | 0,52* | 0,77** | 0,75** | 0,05 | 0,06 | 0,04 | 0,05 |
| Nationality | 0,46 | 0,61 | -0,26 | -0,24 | 0,11 | 0,14 | -0,14 | -0,12 | -0,14 | -0,13 |
| Permanent | -0,78 | -0,76 | -0,52 | -0,52 | -0,97 | -0,97 | -0,06 | -0,08 | -0,03 | -0,05 |
| Organization | 1,45* | 1,19† | 1,60*** | 1,58*** | 1,22* | 1,13* | 0,22** | 0,23** | 0,27*** | 0,28*** |
| Org. Polychronicity | 0,49* | 0,46* | 0,42*** | 0,42*** | 0,32* | 0,31* | 0,08*** | 0,08*** | 0,05* | 0,05* |
| Org. Identification | | 0,45* | | 0,05 | | 0,17 | | -0,01 | | 0,00 |
| Org.Poly. * Org.Ident. | | 0,08 | | -0,01 | | 0,09 | | -0,03 | | -0,02 |
| ΔR^2 | | 0,03 | | 0,00 | | 0,01 | | 0,01 | | 0,00 |
| Overall R ² | 0,12 | 0,15 | 0,27 | 0,27 | 0,13 | 0,14 | 0,19 | 0,20 | 0,27 | 0,28 |
| df | 5-113 | 7-111 | 5-119 | 7-117 | 5-108 | 7-106 | 5-108 | 7-106 | 5-100 | 7-98 |
| Overall F | 3,01* | 2,77* | 8,78*** | 6,20*** | 3,20** | 2,44* | 5,19*** | 3,90*** | 7,44*** | 5,42*** |

† p < 0,1
 * p < 0,05
 ** p < 0,01
 *** p < 0,001

Table 3 Results of hierarchical regression analysis

4.2. Qualitative evidence

The quantitative data on organizational polychronicity show that both in Re.Search and DoE individuals perceive high levels of organizational polychronicity. For instance, at Re.Search individuals underline that theirs is an organization that requires them to work on many projects simultaneously. A manager told us:

Recently we [the R&D unit] get a new project almost every day. Projects grow up like mushrooms. [...] Projects enter from everywhere, because projects are seen as profitable and there is no planning behind their acceptance.

In Re.Search both managers and employees perceive they are required high levels of multitasking between different projects, but the different projects individuals are engaged in are similar in nature. Different is the situation of DoE, where researchers are required to work on activities that are perceived to be, at times, dramatically different, as an associate professor underlines:

Sometimes I feel I do many jobs at once. I am required to teach 120 hours a year. Plus I am vice chair of the department, which means I spend a lot of time in administration. Then... I need to produce excellent research, too! And all of this happens almost in every single day.

In some instances of our qualitative data informants made an explicit link between organizational polychronicity and multitasking. In the following field notes a Re.Search engineer underlines that a person who wants to work in an organization characterized by polychronic time preferences as Re.Search should adapt to that context and behave in a multitasking fashion.

In this organization a person manages 270 million things, she begins something and leaves it there to begin another thing, and again she leaves it there, because there is an urgency and she needs to take a plane and fly to Croatia [...] In my opinion, a person in my organization needs to deal with different contexts and if she does not like that and gets desperate because she needs to move between different activities, well, I think she would better to change job! I think that you need to adapt to the specific context.

The qualitative evidence corroborates the quantitative findings. For example, our qualitative data seem to indicate that organizational identification has a direct effect on the amount of activities individuals are willing to undertake in one single day. For instance, a manager at Re.Search, when commenting upon his extreme multitasking behavior, told us

It is not a matter of individual preference. I simply know what are the things that my organization needs [...] I don't like interrupting what I am doing to go and help in the laboratory, like sweeping the floor or assess the weight of a component on a scale... But if it is needed I do it, because I care.

Similarly, in DoE an assistant professor commented that she felt so obliged to her organization that she thought she should do many extra-role activities, even though she sometimes felt this extreme multitasking to be detrimental to her performance.

I feel obliged to this organization. I feel I have to do all that I can to help. [...] For instance, DoE asks me to manage the master theses of three students a year... but by January I have already taken care of five! And this happens together with my research and other teaching duties...

Some of our informants, both in Re.Search and DoE mentioned that, while doing many activities was fine, being interrupted by and interrupt others was acceptable only to a certain extent. For instance, an assistant professor mentioned the importance of doing many things, but being in control by giving us the example of how she manages her agenda.

Yes, I need to do many things, but I don't want that things happen to me completely random. This is what I do. I have a paper agenda on my table and every two months I

write down what I have to do. [...] And I leave blank spaces to fill in with everything that is unexpected. I know the unexpected will come, but I want to be prepared.

From the interviews, the theme of the multitasking behaviors typical in professional community emerged. For instance, in Re.Search an engineer told us that he perceived that his multitasking behaviors were associated to the acquisition of diversified pieces of knowledge coming from different activities, that allowed him to become a better professional.

I would define myself as a very specialized engineer, dedicated to innovation, who is motivated to find and develop new technologies [...] Acquiring new knowledge also means that it's important that you work in different projects. I work on many projects now.

Similarly, in DoE a few informants mentioned that their behaviors were driven by how their professional community values their willingness and ability to move efficiently between different tasks and activities. A full professor told us:

In order to build an excellent academic CV in Management you need not only to prove that you can do good research and good teaching. You also need to show that you do service for your organization and for your community. [...] Of course, this means you need to be a very good multitasker!

5. Discussion

Our mixed-methods study has shown that the extent to which individuals perceive their organization asks them to be multitasking (i.e. organizational polychronicity) directly influences their actual multitasking behaviors. Our work adds to the literature that tries to explain how the organizational features influence individual behaviors in the workplace. Previous literature on time management has shown some of the variables related to organizational polychronicity in the workplace (e.g., Cotte and Ratneshwar, 1999; Arndt et al., 2006), but has argued that more work was needed to better explain the interplay between individual perceptions about the organization and actual individual behaviors in the workplace related to time (Slocombe and Bluedorn, 1999; Zhang, 2005). Our work contributes to this line of research and, to this regard, consistently with the complementarity purpose of our mixed-method study (Greene et al., 1989), our qualitative evidence corroborated, complemented and extended our quantitative analysis, giving richer and more elaborated insights.

While our hypothesis about a moderating role of organizational identification in the organizational polychronicity-multitasking behaviors was not supported, both our qualitative and quantitative findings suggest that the individual identification with the organization indeed has an impact on how many activities a person is willing to undertake in one single day, but not on other time-related variables.

Moreover, our qualitative analysis also suggests an important difference between the two contexts.

In the very formal context of the research unit of a company, where individuals are asked to work in similar projects, individuals more strongly feel they have to adapt to the organizational style. In the University context, on the other hand, the activities individuals are asked to work simultaneously on are so heterogeneous that individuals often feel overwhelmed. Further, our qualitative evidence supports the idea that a high organizational identifier is willing to take extra overload in term of different projects and/or activities, but she does not accept passively how these activities are divided in one day. In other words, doing many things does not mean not being in control and moving around between activities without a plan, driven by continuous accidental interruptions. Finally, our qualitative evidence suggests that not only organizational polychronicity matters, but also the way an individual perceives the time orientation of his/her profession is important.

Thus, our qualitative evidence suggests to extend the understanding of the context characteristics on multitasking from the close organizational features to the work context at

large, e.g. communities of practices, network of practices, professional communities (e.g. Tagliaventi and Mattarelli, 2006; Tagliaventi et al., 2010), an individual belongs to. We thus propose to extend the concept of organizational polychronicity to work polychronicity.

Our work of course has limitations that can pave the way to other future research directions. Even if we developed a profound understanding of the dynamics underlining professionals' time management dynamics, we have to acknowledge that our two organizations present differing features that future studies could take into account. For instance, Re.Search is a context much more formalized compared to an academic setting and therefore the organizational demands may be perceived as more constraining.

Also, the level of work interdependence – and the subsequent influence on multitasking – of a group of engineers working in a firm is higher as compared to academic researchers who are probably less dependent on others to complete many work activities.

In addition, we controlled for some individual differences that extant literature suggests could influence the individual multitasking behaviors (for instance organizational position). However, we did not include in our theorizing and analysis time-related individual differences such as, for instance, individual polychronicity or time urgency. We believe that future studies could greatly benefit from an investigation of the interplay between perceived temporal organizational norms and individual time-related differences. In particular, it would be particularly insightful to explore what happens when individual and organizational preferences for managing time are not aligned.

As for practical contributions, this work suggests two managerial implications. First, managers should be aware that individuals develop perceptions of the time orientation of their organization and that these perceptions drive their behaviors. Thus, managers should be sure that everyone is on the same page and interprets organizational requirements in a way that is conducive to better organizational outcomes. For instance managers should promote a 'time use etiquette' or give instructions about the use of ICTs in terms of time issues, or promote a common behaviour etiquette in meetings in relation to the acceptability of multitasking. Second, managers should actively clarify that the organizational identity comprises certain values related to time management, so that high identifiers actually comply with those values.

6. Conclusion

The current research contributes to the literature on multitasking and interruptions furthering our understanding of how features of the organizational context, and in particular perceived organizational polychronicity, influence multitasking behaviors. We thus add to the literature that shows how the individuals' choices in terms of multitasking behaviors are socially embedded, above and beyond individual preferences and the nature of the tasks. Moreover, we argue that an enhanced comprehension of the factors that may influence the patterns of multitasking and interruptive behaviors has the potential to improve not only our theorizing as researchers but also the effectiveness of every organizational intervention aimed at helping people to manage effectively their tasks.

References

- Adler, P. A. and Adler., P. (1988). Intense loyalty in organizations: A case study of college athletics. *Administration Science Quarterly*, 33 (3), 401-417.
- Aiken, L. S. and West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.
- Ancona, D. G., Goodman, P.S., Lawrence, B.S. and Tushman, M.L. (2001). Time: A new research lens. *Academy of Management Review*, 26 (4), 645-663.
- Appelbaum, S. H., Marchionni, A. and Fernandez, A. (2008). The multi-tasking paradox: Perceptions, problems and strategies. *Management Decision*, 46 (9), 1313-1325.
- Arnt, A., Arnold, T.J. and Landry, T.D. (2006). The effects of polychronic orientation upon retail employee satisfaction and turnover. *Journal of Retailing* 82 (4), 319-330.
- Ashforth, B. E. and Mael, F. (1989). Social identity theory and the organization. *Academy of management review*, 14 (1), 20-39.
- Ashforth, B. E., Harrison, S. H. and Corley, K. G. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management*, 34 (3), 325-374.
- Bartel, C. A. (2001). Social comparisons in boundary-spanning work: Effects of community outreach on members' organizational identity and identification. *Administrative Science Quarterly*, 46 (3), 379-413.
- Bergami, M. and Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology*, 39 (4), 555-577.
- Blount, S. and Leroy, S. (2007). Individual temporality in the workplace: how individuals perceive and value time at work. *Research in the sociology of work*, 17, 147-177.
- Bluedorn, A. C., Kalliath, T. J., Strube, M. J. and Martin, G. D. (1999). Polychronicity and the Inventory of Polychronic Values (IPV): The development of an instrument to measure a fundamental dimension of organizational culture. *Journal of Managerial Psychology*, 14 (3/4), 205-231.
- Bluedorn, A. C., Kaufman, C. F. and Lane, P. M. (1992). How many things do you like to do at once? An introduction to monochronic and polychronic time. *Academy of Management Executive*, 6 (4), 17-26.
- Carlson, S. (1951). *Executive behaviour: a study of the work load and the working methods of managing directors*. Arno Press.
- Cheney, G. (1983). The rhetoric of identification and the study of organizational communication. *Quarterly journal of speech*, 69 (2), 143-158.
- Converse, P. E. (1968). Time budgets. In D.L. Sills and R. K. Merton (Eds), *International encyclopedia of the social sciences*. p. 42-47. New York, NY: Crowell Collier and Macmillan.
- Cotte, J. and Ratneshwar, S. (1999). Juggling and hopping: What does it mean to work polychronically? *Journal of Managerial Psychology*, 14 (3/4), 184-204.
- Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage
- Dabbish, L., Mark, G. and González, V. M. (2011). Why do I keep interrupting myself?: environment, habit and self-interruption. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, p. 3127-3130. ACM.
- Dutton, J. E., Dukerich, J. M. and Harquail, C. V. (1994). Organizational images and member identification. *Administrative science quarterly*, 39 (2), 239-263.
- Flower F. J. (2009). *Survey Research Design*. Thousand Oakes, CA: Sage.
- Fontana, A. and Frey, J. H. (2003). The interview: from structured questions to negotiated text. In N. Denzin and Y.S. Lincoln (eds.), *Collecting and Interpreting Qualitative Materials*, p. 61-106. Thousand Oaks, CA: Sage.
- Foreman, P. and Whetten, D. A. (2002). Members' identification with multiple-identity organizations. *Organization Science*, 13 (6), 618-635.

- Greene, J. C., Caracelli, V. J. and Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, 11 (3), 255-274.
- Gendreau, R. (2007). The new techno culture in the workplace and at home. *Journal of American Academy of Business*, 11 (2), 191-196.
- González, V. M. and Mark, G. (2004). Constant, constant, multi-tasking craziness: managing multiple working spheres. In *Proceedings of the SIGCHI conference on Human factors in computing systems*, p. 113-120. ACM.
- Grandhi, S. and Jones, Q. (2010). Technology-mediated interruption management. *International Journal of Human-Computer Studies*, 68 (5), 288-306.
- Gubrium, J. F. and Holstein, J. A. (Eds.) (2003). *Postmodern interviewing*. Sage.
- Hall, E.T. (1990). *The Hidden Dimension*. Anchor Press, New York.
- Hall, E.T. and Hall, M.R. (1990). *Understanding Cultural Differences*. Intercultural Press, Yarmouth, ME.
- Harr, R. and Kaptelinin, V. (2007). Unpacking the social dimension of external interruptions. In *Proceedings of the 2007 international ACM conference on Supporting group work*, p. 399-408. ACM.
- Harvey, A. S. and Pentland, W.E. (2002). Time use research. In W.E. Pentland (Ed) *Time use research in the social sciences*, p. 3-18. New York, NY: Kluwer Academic Publishers.
- Kaufman, C. F., Lane, P. M. and Lindquist, J. D. (1991). Exploring more than 24 hours a day: A preliminary investigation of polychronic time use. *Journal of consumer research*, 18 (3), 392-401.
- Kaufman-Scarborough, C. and Lindquist, J. D. (1999). Time management and polychronicity: Comparisons, contrasts, and insights for the workplace. *Journal of Managerial Psychology*, 14 (3/4), 288-312.
- Mael, F. and Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of organizational Behavior*, 13 (2), 103-123.
- Mark, G., Gonzalez, V. M. and Harris, J. (2005). No task left behind?: examining the nature of fragmented work. In *Proceedings of the SIGCHI conference on Human factors in computing systems*, p. 321-330. ACM.
- Mark, G., Voids, S. and Cardello, A. (2012). A pace not dictated by electrons: an empirical study of work without email. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, p. 555-564. ACM.
- Miles, M. B. and Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.
- Mintzberg, H. (1973). *The Nature of Managerial Work*. New York: Harper and Row.
- O'Reilly, C. A. and Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of applied psychology*, 71 (3), 492-499.
- Perlow, L. A. (1999). The time famine: Toward a sociology of work time. *Administrative science quarterly*, 44 (1), 57-81.
- Pratt, M. G. (1998). To Be or Not to Be? Central Questions in Organizational Identification. In D.A. Whetten, P.C. Godfrey, (eds.) *Identity in Organizations. Building theory through conversations*, p. 171-207. Sage Publications, Thousand Oaks, CA.
- Pratt, M. G. (2000). The good, the bad, and the ambivalent: Managing identification among Amway distributors. *Administrative Science Quarterly*, 45 (3), 456-493.
- Salvucci, D. D. and Taatgen, N. A. (2010). *The multitasking mind*. Oxford University Press.
- Simon, H. A. (1976). *Administrative behavior (Vol. 3)*. New York: Free Press.
- Slocombe, T. E. and Bluedorn, A. C. (1999). Organizational behavior implications of the congruence between preferred polychronicity and experienced work-unit polychronicity. *Journal of Organizational Behavior*, 20 (1), 75-99.
- Souitaris, V. and Maestro, B. M. (2010). Polychronicity in top management teams: The impact on strategic decision processes and performance of new technology ventures. *Strategic Management Journal*, 31 (6), 652-678.

- Spradley, J.P. (1979). *The ethnographic interview*. Harcourt Brace Jovanovich College Publishers, Orlando, FL.
- Strauss, A. and Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
- Symon, G. E. and Cassell, C. E. (1998). *Qualitative methods and analysis in organizational research: A practical guide*. Sage Publications Ltd.
- Tagliaventi M. R. and Mattarelli E. (2006). The role of networks of practice, value sharing, and operational proximity in knowledge flows between professional groups. *Human Relations*, 59 (3), 291-319.
- Tagliaventi, M.R., Bertolotti and F. Macrì, D.M. (2010). A Perspective on Practice in Interunit Knowledge Sharing. *European Management Journal*, 28 (5), 331-345.
- Trafton, J. G. and Monk, C. A. (2007). Task interruptions. *Reviews of human factors and ergonomics*, 3 (1), 111-126.
- Wickens, C. D. (2008). Multiple resources and mental workload. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 50 (3), 449-455.
- Wrzesniewski, A. and Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26 (2), 179-201.
- Zellmer-Bruhn, M. E. (2003). Interruptive events and team knowledge acquisition. *Management Science*, 49 (4), 514-528.
- Zhang, Y., Goonetilleke, R. S., Plocher, T. and Max Liang, S. F. (2005). Time-related behaviour in multitasking situations. *International journal of human-computer studies*, 62 (4), 425-455.