

Performing Leadership "In-Between" Earth and Sky

Florence Allard-Poesi ● Yvonne Giordano

Abstract. This research aims to understand how leaders with different expertise perform distributed leadership through their discursive acts. Relying on Searle's (1976) Speech Acts Theory and its derivative model of organizing through communication as developed by Cooren (2001) and Fairhurst (2007; Cooren & Fairhurst, 2004), we conduct an in-depth analysis of the interactions (through emails and phone calls) between the forecasters (the "earth") and the team leaders (the "sky") during the summit attempts of two commercial expeditions: one to Broad Peak and one to Mt. Everest via the Northern Ridge. Our research contributes to the understanding of the enactment of distributed leadership in three ways. Firstly, it provides an unprecedented description of the pattern of speech acts through which leaders perform two configurations of distributed leadership, namely coordinated leadership and collaborated leadership (Spillane, 2006). Secondly, the process analysis conducted on the forecaster and team leader interactions shows that these two leadership configurations do not completely substitute for each other, contrary to what previous studies in education have argued, but can coexist during the same expedition. Thirdly, our research contributes to a socio-constructionist perspective on leadership in showing how, while confronted with similar physical, technological, and socio-economic conditions and demands, the team leaders and the forecasters enact noticeably different leadership configurations.

Florence Allard-Poesi

Université Paris-Est,
Institut de Recherche en Gestion
(EA 2354)
allard-poesi@u-pec.fr

Yvonne Giordano

Université Nice Sophia-Antipolis,
GREDEG (UMR 7123),
yvonne.giordano@unice.fr

Although, since the late 1980s, 8000m summits have attracted an increasing number of commercial expeditions, the 1996 Everest tragedy reminds us that mountaineering at high altitudes remains highly risky (Krakauer, 1997; Kayes, 2004; Tempest, Starkey, & Ennew, 2007). Making sense of and adapting to a hostile, complex, and fast-changing environment requires not only that the individual be in very good physical condition and possess a high level of technical expertise and experience, but also have the capacity to adapt to, if not anticipate, a hostile, ever-changing environment; a capacity that becomes all the more vulnerable as physical, emotional, and cognitive abilities become severely altered due to fatigue, cold, and lack of oxygen (Elmes & Frame, 2008).

Since the 1996 tragedy, mountaineering has dramatically evolved. To increase their probability of success in summit attempts, and thus the commercial attractiveness of their business, team leaders do not hesitate to use the latest communication technologies (i.e., usually the internet at Base Camp, and mobile and sat phones at higher altitudes) and weather forecasts. Commercial expeditions, in particular, are now systematically assisted by professional forecasters – located worldwide – who send them daily updated weather forecasts that detail the various ascent parameters. Temperature, humidity, wind, and risks of snowfall and storms are estimated for the next few hours and days at different altitudes and for the particular slope of the mountain where the team is

located. These forecasts are communicated by email, SMS, and phone calls. They can take the form of plain text (in emails), abbreviations (in SMS), or graphics (maps, windgrams, or meteograms: see Appendix 1 for an example). These forecasts are crucial at high altitudes where weather conditions are extremely volatile. Even if not 100% reliable, these forecasts limit the risk of being trapped in bad weather conditions by alerting the team leader, either before they leave Base Camp or during the ascent, so that they have the possibility of stopping before the weather deteriorates. Weather forecasts can also indicate favorable conditions. As reaching an 8000 m summit takes a few days (after, of course, approximately six weeks of acclimatization) knowing when a weather window will open up can make a difference. In such situations, the team leader no longer decides alone when to begin a summit attempt (or when to stop it). These decisions are highly influenced by, if not shared with, the forecaster.

Since the late 1990s, a growing number of researchers (e.g., Gronn, 1999; Pearce & Conger, a & b, 2003; Spillane, 2006) have adopted a shared, relational, or distributed perspective on leadership, bringing invaluable insights into the antecedents and outcomes of such leadership configurations. While taking a step away from an individualistic and essentialist concept of leadership, empirical studies on the micro-behaviors of leaders and their “relationships-as-they-happen” (Fairhurst & Uhl-Bien, 2012:1046) are still the exceptions. Following Fairhurst (2007: 6), we consider leadership to be a “process of influence whereby one’s ideas or actions are [...] making a difference towards the accomplishments of a task or problems that are important to them”. By “making a difference”, recent empirical studies have meant (and have investigated) the framing of problems and solutions (Clifton, 2012), contributions to conflict resolution and consensus (Choi & Schnurr, 2014), and the opening up or closing down of sequences of coordinated actions (Fairhurst, 2007) during team conversations.

Following this discursive approach to leadership (see Fairhurst, 2007; 2011; Fairhurst & Grant, 2010; Fairhurst & Connaughton, 2014), empirical studies on interaction processes among teams show that leadership rarely lies in the hands of a sole person. On the contrary, leadership appears as a process that is highly contested by, negotiated between, and distributed among team members.

Capitalizing on previous works, the aim of this research is to investigate the discursive acts through which leaders, who each possess different expertise, perform distributed leadership. Relying on Searle’s (1976) Speech Acts Theory and its derivative model of organizing through communication as developed by Cooren (2001) and Fairhurst (2007; Cooren & Fairhurst, 2004), we conduct an in-depth analysis of the interactions – through email, SMS, and phone calls – between the forecasters (the “earth”) and the team leaders (the “sky”) during the summit attempts of two commercial expeditions: the first to Broad Peak and the second to Everest via the Northern Ridge.

The theoretical contribution of the research is threefold. Firstly, it provides an unprecedented description of the pattern of speech acts through which leaders perform two configurations of distributed leadership, namely coordinated leadership and collaborated leadership, thereby complementing prior studies on the dynamics of leadership during team interactions. Secondly, the process analysis conducted on the forecaster and team leader interactions shows that these two leadership configurations do not completely substitute for each other but, contrary to what previous studies in education have argued, may coexist during the same expedition. Thirdly, our research takes a further step away from a determinist concept of leadership in showing how, while confronted with similar physical, technological, and socio-economic conditions and demands, team leaders and forecasters may enact rather different leadership configurations.

In sum, our research contributes to a better understanding of how distributed leadership is performed “in-between” leaders through their discursive behaviors.

The remainder of the article is organized as follows. Firstly, we briefly review the work on distributed leadership and highlight the interest of studying these processes through the interactions between leaders. Secondly, we describe the context within which this research took place and the methods of data collection and analysis that were used. We then present the two case studies and conduct a detailed analysis of the interactions between the team leaders and the forecasters. Finally, we discuss research contributions.

UNDERSTANDING DISTRIBUTED LEADERSHIP

While individualist, essentialist, and heroic concepts of leadership continue to dominate, a growing number of researchers call for adopting processual, adaptive, shared, or distributed perspectives on leadership (Avolio, Walumbwa, & Weber, 2009: 441-2; Crevani, Lindgren, & Packendorff, 2010; Fletcher, 2004; Kozlowski & Ilgen, 2006: 109). This emerging research current argues that senior leaders or leaders in cross-functional teams do not necessarily possess the sufficient and/or relevant information and knowledge to make fast, appropriate decisions (Pearce & Conger, 2003b: 2; Pearce, Manz, & Sims, 2009). In a complex, turbulent environment, an individual, vertical leader is less likely to have all the knowledge and skills required to effectively lead the team and make adequate and informed decisions. Leaders are encouraged to develop *shared leadership* (Carson, Tesluk, & Marrone, 2007; Pearce & Conger, 2003ab), delegating to the front-line so that team members lead themselves. Other researchers argue for the study of *distributed leadership* (Gronn, 2002; Spillane, 2006), whereby leaders share decision-making with other executives, independent consultants, or experts, who may belong to other organizations or be located in different divisions or plants (Bell & Kozlowski, 2002: 31; Hinds & Bailey, 2003). In this distributed configuration, it is not unusual for teams to cross conventional time, space, and organizational boundaries, in particular when a project is particularly complex and relies on rare expertise (Gibson & Gibbs, 2006: 458).

DISTRIBUTED LEADERSHIP DEFINED

Leadership may be defined as a set of functions necessary to accomplish the team's mission (Spillane, 2006). In a distributed configuration, these functions (and the set of micro-tasks necessary to accomplish them) are not the prerogatives of an individual leader alone. Instead, they are seen as performed *in and through interactions between two or more leaders* (Crevani et al., 2010; Spillane, Diamond & Jita, 2003; Spillane, Halverson, & Diamond, 2004; Mehra, Smith, Dixon, & Robertson, 2006). This definition has profound implications for the understanding of leadership.

First, it implies that different leadership functions (e.g., direction and structuration, adaptive monitoring of the team's performance and environment, support and learning, motivation, and performing team tasks, Klein, Ziegert, Knight, & Xiao, 2006; Morgenson, DeRue, & Karam, 2009) may be accomplished by different leaders, implying that they coordinate their actions. Relying on Thompson's (1967) typology of task interdependencies (reciprocal, pooled, and sequential) and Weick and Robert's (1993) notion of heedfulness, Spillane (2006) suggests that leaders may co-perform leadership practice through *coordinated distribution* (i.e., *sequential interdependency*, Thompson, 1967) or *collaborated distribution* (i.e., *reciprocal interdependency*, Thompson, 1967). In *coordinated distribution*, leadership practices are articulated in a particular sequence. For instance, Klein et al. (2006) show that functions of leadership in a trauma center

are frequently distributed among the attending surgeon, the resident, and the fellow, so that the more experienced team member monitors team action, another team member provides direction and hands-on treatment, and a third teaches and explains what s/he is doing. An in-depth analysis of the transcripts of a police radio conversation during the rescue of a female police officer – who was shot by an assailant, then struggled with him, and finally called for help – (Cooren & Fairhurst, 2004, see also Fairhurst, 2007) showed that the dispatcher, although not a police officer, played a crucial role in organizing the rescue. As the police officer was not localized when calling for help, the dispatcher launched the assistance call and orchestrated the search (by asking the police officer several times where she was until she answered and not acknowledging another police officer's suggestion of where the hurt officer was located) until a third officer found the injured police officer and took the lead of the rescue.

In *collaborated distribution*, two or more leaders work together to accomplish the same leadership routine, such as facilitating a meeting, monitoring of the team, solving disagreements, or negotiating consensus (Choi & Schnurr, 2014). Collaborated distribution relies on reciprocal interdependencies so that the actions of each leader are input for those of the other(s) and vice versa. Each leader observes the perspectives and actions of the other(s), leading to heedful interrelating. According to Spillane (2006), this does not mean that leaders necessarily share the same views or goals, only that they are responsive to the actions of the other(s) and rely on combining their different types of knowledge during interaction. Investigating the conversation of a research team working on a scientific project, Choi and Schnurr (2014) demonstrated that different team members (from the senior professor to the post-doctoral student and assistant professor) took on a leadership role at different points of the meeting and contributed, through various discursive practices, to the solving of disagreements. In a similar vein, Clifton (2012) showed that during a staff meeting of a European Office of a British cultural organization, the framing of the issue at hand (the screening of a political film called *Gas Attack* at a film festival) was not the prerogative of the director but contested and negotiated among all team members.

A second implication drawn from our understanding of leadership is that the distributed perspective sees leadership as dynamically defined according to the progression of team work, as exemplified by Klein et al. (2006) and the Cooren and Fairhurst (2004) studies, and group member behaviors. Much attention is paid to the expectations and reactions of followers (Spillane, 2006) and other stakeholders (Crevani et al., 2010) that may extend, complement or resist the leaders' actions.

Third, a distributed approach to leadership implies the investigation of the material, structural, and normative environment of the team, in that these dimensions are mediational means through which leadership is exercised. According to Spillane, Diamond, and Jita (2003: 542), "studies of leadership expertise must investigate how, and the extent to which, the expertise essential for the execution of particular leadership tasks is stretched over different leaders as well as over the tools with which they work". Cooren (2001) and Fairhurst (2007) underline that organizational procedures, policies, and contracts play a crucial role in reminding or telling people how they should act and interact (as in the case of the rescue of the police officer) but that, at the same time, these organizational texts may be abandoned or modified if they do not appear adapted to the situation or mandatory.

Gronn (2002) shows how new communication technologies influence the way leadership is enacted. In this perspective, Bell and Kozlowski (2002) recommend that leaders adapt communication technology to the complexity of the tasks at hand. When the task's complexity increases, a higher degree of collaboration is needed. Rich media, synchronous communication technologies

such as phone or video-conference are recommended as they permit real-time, reciprocal interdependence and facilitate group decision-making (Bell & Kozlowski, 2002: 25; 42).

Finally, researching distributed leadership implies paying particular attention to the "in-between" of leadership, i.e. the actual practices through which team members interact and exercise distributed leadership (Spillane, 2006: 16; Crevani et al., 2010). In fact, while Mehra and colleagues (2006) have shown that teams whose leaders cooperate were associated with better performance (as opposed to teams centralized around one or two isolated leaders), they did not describe how these leaders performed such cooperation processes. Spillane et al. (2003; 2004), in their study of distributed leadership in schools, mainly focused on leadership functions, such as monitoring and control, or meeting facilitation, but neglected other strategic functions such as planning and decision-making and never went into the details of the conversations.

UNDERSTANDING THE HOW OF DISTRIBUTED LEADERSHIP: THE ROLE OF DISCURSIVE PRACTICES

While still rare compared to quantitative studies, qualitative research may bring invaluable insight into the discursive practices through which leadership is distributed. Recent empirical studies have shed light on the discursive behaviors of participants in decision-making (see Choi & Schnurr, 2014; Clifton, 2012), or on action teams (Cooren & Fairhurst, 2004) but they have focused on rather short periods of group work – usually a few meeting hours – between people having similar expertise or knowledge domain in order to investigate either the temporal dynamics of distributed leadership – how group members alternatively take the lead of the group (Cooren & Fairhurst, 2004; Fairhurst, 2007) – or the enactment of collaborated leadership (i.e. co-decision, Choi & Schnurr, 2014; Clifton, 2012). On the whole, previous works have not considered how two or more group members, with different expertise, lead simultaneously and coordinate through their discursive behaviors.

Following Fairhurst (2007), we consider that in-depth analyses of the sequence and temporal form of conversations are necessary to comprehend the dynamics and relative symmetry/asymmetry of influence patterns between team members. Searle's (1976) Speech Act Theory, as developed by Cooren (2001) and Fairhurst (2007) for the analysis of conversations in organizations, appears suitable to this end¹. Relying on Austin's performative perspective on language, the Speech Act Theory proposes a categorization of speech acts (see Table 1 below). For instance, assertives (or "representatives", Searle, 1976) are statements that convey information that "commit[s] the speaker (in varying degrees) to the truth of the expressed proposition" (Searle, 1986: 218). An assertive is supposed "to represent a certain state of affairs". The degree of commitment to or belief in the described state of affairs may be weak, as when someone formulates a hypothesis, or strong, as when s/he swears or insists that her/his statement is true (Searle, 1976: 10). Directives are defined as "attempts by the speakers to get the hearer to do something" (Searle, 1976: 11). Requests, questions, warnings, suggestions, and advice are examples of directives, the illocutionary force of which may go from weak (e.g., to invite or suggest) to strong (e.g., to demand, order, or insist).

1. Conversation Analysis and Discursive Psychology (see Fairhurst, 2007, Fairhurst & Uhl-Bien, 2012, for reviews and illustrations) are alternative theoretical and methodological approaches that permit detailed investigation of the discursive devices used by participants to understand each other and produce/reproduce organizational activities. However, these approaches necessitate detailed transcripts of naturally occurring talk. Interaction Analysis, which relies on a simplified coding of interaction (see Fairhurst, 2007), is amenable to quantitative investigation but can take into account neither the equivocality of meanings nor the variety of discursive practices used by participants during their conversations.

Table 1. Types of speech acts (from Fairhurst, 2007: 33)

Speech Acts	Definition	Example
Assertives	Represent as actual a state of affairs	"It's raining."
Directives	Attempt to get the hearer to do something	"Check on her safety!"
Commissives	Commit to a future course of actions	"I'll be right there."
Declaratives	Bring a state of affairs into existence by representing oneself as performing that action	"I baptize you."
Accreditives	Transfer permission or authorization from one agent to a recipient	"You have my permission to leave."
Expressives	Express the attitudes of the speaker about a state of affairs	"Thank you."

Following Greimas (1987), Cooren (2001) suggests that the sequential ordering of speech acts in episodes (or schemata) are the building blocks for organizing. In this perspective, the completion of any task may be conceived as 1) an opening where the necessity for acting is affirmed through directives or assertives, 2) an enactment where a person commits itself to do the task (through commissives) and does so, sometimes having been told how to do it (through assertives) or authorized to complete it (through accreditives) and 3) a closure where the task is evaluated or acknowledged (through expressives).

Such ordering can be interrupted at any point in time and space, and completion of the organizational task often implies the embedding of several schemata that can be initiated, contested, and closed by different persons (see Cooren & Fairhurst, 2004). In these analyses, directives (i.e., requests/demands) and expressives (as assessment of the tasks performed) are, with floor dominance, considered as indicative of leadership and understood as influential acts of organizing.

Relying on this conceptual framework, we conducted an in-depth analysis of the interactions between forecasters and team leaders during two expeditions at high altitudes. Our research aims to complement previous work and answer the following research questions: How do leaders with different expertise perform distributed leadership through their speech acts during their interactions? How do these speech acts articulate one another over periods exceeding a few hours? In the next section, we present the two case studies and the methods of data collection and analysis.

THE BROAD PEAK AND EVEREST EXPEDITIONS

These case studies are part of a larger research project on distributed leadership and decision-making in geographically dispersed organizations confronted with high-risk situations (six expeditions had been studied). As forecasters and mountaineers do not share the same expertise, as they have to interact via communication technologies, take decisions, and adapt in a complex and uncertain environment, these case studies provide ideal characteristics for the study of distributed leadership (see Pearce & Conger, 2003; Pearce et al., 2009). The socio-constructionist approach to leadership embraced in this research also enables a high degree of sensitivity to the situated demands of the context as enacted by the participants – rather than on “given” contextual aspects. In order to increase the comparability of the leaders’ speech acts as the expeditions unfold – and so minimize alternative interpretations of the observed leader interactions – the two case studies presented here, namely the Broad Peak and Mt. Everest (through the Northern Ridge) expeditions, have been chosen for their numerous shared aspects.

First of all, they are both commercial expeditions led by high mountain guides known worldwide as highly experienced himalayists. John¹, the leader of the Broad Peak expedition, is one of the few European mountaineers who could possibly attempt the ascent of the 14 highest summits in the world, as he has both the ability and drive to do so. He is one of the heads of SkyInc, a French company which specializes in commercial expeditions worldwide, including in Antarctica. The Broad Peak team is composed of John, two other guides, three Nepalese Sherpas, and five clients. Georg, the Swiss leader of the Everest expedition, is the director of StarInc, one of the largest companies in high mountaineering expeditions, with more than 50 guides worldwide. The Everest team consists of Georg, one other guide, seven clients, and Sherpas. Both Georg and John pay particular attention to the selection of the clients in order to minimize health risks and to ensure that they have the requisite levels of technical expertise and training to succeed in their attempt.

Second, both expeditions are assisted by the same team of forecasters belonging to a small division of a larger Swiss company, EarthInc, which specializes in weather forecasts. The forecasting team, headed by Martin, is dedicated to weather forecasts for mountaineers worldwide. The company started its forecasting business for mountaineering in 1997, when Georg asked them to provide weather forecasts for his expeditions. The team leaders, John and Georg, are used to working with the EarthInc team, and have extensive experience reading weather maps and charts (see Appendix A). While the forecasters are not necessarily the same people from day to day, they rely on the same weather models, relatively standardized procedures, and team briefings, so as to guarantee consistency in the content and format of the predictions sent to the leader of the expedition.

Third, the team leaders and the forecasters are linked by similar commercial contracts: Georg and John are both clients of EarthInc. While such commercial relationships (i.e., the "silent rhetoric", as nicely defined by Cooren, 2001) may imply that the forecasters are necessarily subordinates to the expeditions' leaders, experience shows that forecasters, because of their expertise, exert tremendous influence on team leaders (see Giezendanner & Guais, 2007). If legal and professional rules imply a relationship of subordination, the nature of the actual relationship is, in fact, constructed by the leaders' and the forecasters' discursive practices during the expedition.

Fourth, both expeditions use similar communication technologies during the expeditions. When the leader is at the Base Camp or in the Advanced Base Camp at Everest, weather forecasts are sent by emails only; when the team progressed to higher altitudes, both emails and SMS are employed. The leaders send feedback and specific requests and questions, mostly via emails. When a favorable weather window is forecast and the team decides to attempt the summit's ascent, it is not unusual for the leader to call EarthInc to get the latest forecasts before the summit push, i.e., the last part of the expedition – usually the most difficult one at high altitude.

Fifth, while they do not present the same kind of difficulties, Broad Peak and Everest can still be considered comparable. The technical difficulties of the mountain, summarized by their total number of points, are 14 for Everest (via the Northern Ridge) and 16 for Broad Peak (on a scale going from 0 to 20, Technical guidelines, StarInc). The lack of oxygen at Everest and low temperature are two of its major difficulties for mountaineers. However, oxygen levels can be supplemented by an adequate supply and help from Sherpas (Georg, pre-expedition interview). The North route is "a little bit more technical if there is no snow" (Georg, pre-expedition interview) than the South route but it is also safer, as it is less affected by humidity and more affected by wind and "the wind forecast is very, very accurate, much better than the humidity or the precipitation forecasts" (Georg, pre-expedition interview). Broad Peak, with its altitude of

2. The names of those involved and their companies have been changed to preserve confidentiality.

8047m, at first appears much easier to ascend than Everest. However significant portions of the ascent approximate 45-50 degrees so that “an excellent physical condition and a very good level in climbing” are requested (SkyInc website). Located near the K2 in Karakoram, North Pakistan, Broad Peak “is not an easy 8000 like the Shisha, the Cho Oyu, or the Manaslu” (John, pre-expedition interview). The ascent takes the West face, which is less exposed to the sun in the morning. The snowfalls accumulate during the afternoon, increasing the risk of avalanche and snow tracing work (John, pre-expedition interview).

Sixth, the “performance” of the two expeditions may be considered as similar: while the Everest team reached the summit after two attempts in rather good weather conditions, the Broad Peak team came back safely after two unsuccessful attempts in very bad weather conditions.

Finally, approximately five to seven weeks (including acclimatization) are necessary to complete the expeditions. The Everest expedition left Europe on April 6, 2012, and came back on June 1. Weather assistance began on April 18 and stopped on May 26, when the team reached the summit (49 days). The Broad Peak team left Europe on June 1, 2012, and came back on July 8. Their assistance began on June 4 and stopped July 6 (34 days).

On the whole, while not presenting the same topographical and weather conditions, the two expeditions share important characteristics in terms of team composition, weather assistance, commercial contract, technology, and objective: reaching the top without endangering the safety of the clients.

RESEARCH METHODS

DATA COLLECTION

Both case studies rely on interviews, naturally occurring talks (Silverman, 2006), and documentary data. In-depth interviews were conducted with the team leaders before and after the expeditions. The pre-expedition interviews focused on their prior experiences with EarthInc, the composition of the team, the preparation for the expedition, and the main difficulties that were anticipated. Post-expedition interviews were articulated around the critical phases of the expeditions, the decisions to attempt the summit – or to stop it – and their interactions with EarthInc. Martin, the leader of the forecaster team, was also separately interviewed both before and after the expeditions. Peter, another forecaster who assisted Georg during his two summit attempts, participated in the Everest post-expedition interview; Peter also assisted John during his two attempts. The interviews lasted from 60 to 90 minutes and were held in English (except John’s interviews, which were held in French). All interviews were recorded and transcribed.

The core data set consisted of the messages exchanged between the forecasters and the team leaders. For the Broad Peak expedition, these data were comprised of emails (plain texts and charts) and SMS sent by the forecasters, the emails sent by John to the forecasters, and the three phone conversations that Peter had with John during his two summit attempts. All these data were in English. For the Everest expedition, the data included the emails exchanged between the forecasters and Georg, as well as the four conversations Peter had with Georg during his two summit attempts. These data were in Swiss German and so have been translated into English. Unfortunately, in both cases, only Peter’s end of the conversations could be recorded. While John and Georg were equipped with a voice recorder, it was too difficult to use when calling with the sat phone sometimes outside the tents in the cold and wind. As they were focused on the weather conditions, however, the content of the conversations

was not difficult to understand. While not without limitations, it was possible to draw some tentative conclusions about the discursive practices of the forecaster during the phone call.

The data were further complemented by the information on the Broad Peak expedition sent upon request by the company to the prospects and clients, the diary John recorded on voice recorder, the blog he and two other guides wrote and published on SkyInc's website during the expedition, and informal meetings the second author had with Georg after the expedition. For both expeditions, additional interviews and workshop meetings with the EarthInc team, with other guides and mountaineers, and with a French weather forecaster have been helpful in understanding the context and the issues at stake during the interactions between the forecasters and the mountaineers. The research project also relied greatly on the insider knowledge and mountaineering experience of the second author³.

DATA ANALYSIS

Confronting the different data sources, we first established a chronology of the expeditions and identified the different phases of the summit attempts after acclimatization. These chronologies were validated by the team leaders during the post-expedition interviews. It was possible to approximate the date when the team leader decided to attempt to reach the summit (two attempts during both expeditions) and when they decided to stop (two stops during Broad Peak, one stop during the Everest expedition).

Secondly, we calculated the frequencies of message exchanges during the summit attempts, as these can be taken as an indicator of the intensity of the interactions between the leader and the forecasters.

Thirdly, in order to draw insights into leadership distribution, we analyzed the content of their interactions. As the content of the messages sent by the forecasters mainly consisted of detailed information about the weather parameters (in plain text and charts, see Appendix 1), we focused on the emails sent by Georg and John to EarthInc and on the forecasters' end of the conversations during the summit attempts.

We relied on Searle's classification of speech acts (see Table 1) to conduct a sequential analysis of the interactions – via emails and phone conversations – between the forecasters and the team leaders during their summit attempts. Researchers in discourse analysis emphasize that classifying an utterance as a directive or assertive is not an easy task and always implies some amount of interpretation from the hearer and, of course, from the analyst. Here we followed an interaction and conversational analysis analytical stance according to which “a person's behavior is best described in terms of the behavior of those immediately about that person, those with whom the person is doing the interactional work in the construction of recognizable social scenes or events” (McDermott & Roth, 1978: p. 321). In this perspective, the meaning of an utterance cannot be interpreted without taking into account the context surrounding it (i.e. the talks that come before, and those that follow) in that they indicate how they have been understood by the hearer (Potter, 2004; Heritage, 2004). As some parts of the conversation were missing, it was not possible to conduct a turn-by-turn analysis of the phone call between the forecaster and the team leader.

Another difficulty concerns potential misunderstanding. Except for with John, who is French, all interviews were conducted in English, which was not the mother tongue of the forecasters and Georg (who are Swiss German), or the researchers. This could have led to misunderstandings from both sides. According to Martin, however, English leads to fewer misunderstandings because English has “fewer words” to describe weather parameters in the mountains in comparison to German. In order to limit major misinterpretations, all

3. The second author is not a himalayist but has considerable experience mountaineering in the Alps and can be considered a “competent performer” (Dreyfus and Dreyfus, 2005: 783-6).

interpretations were submitted to the protagonists. We will show that this, of course, does not preclude equivocality. We were careful to underline equivocality of speech acts when it happens during the interactions.

Though not without limitations, it is believed that the analysis of the leaders' and the forecasters' discursive practices in terms of speech acts is indicative of the leadership configuration co-performed when interacting (see also Crevani et al., 2010).

In the next sections, we provide a brief overview of the messages exchanged during the two expeditions before analyzing the interactions between the forecasters and the leaders.

UNDERSTANDING THE "IN-BETWEEN" OF LEADERSHIP

In both expeditions, forecast assistance began when the team arrived at Base Camp. EarthInc usually sent a daily report by email and/or SMS around 9 a.m. Swiss time, so that the leader received it at the end of the mountaineering day (around 3-4 p.m. Himalayan time; 12 a.m. Pakistani time). Upon request, EarthInc also made complementary analyses (about the wind, for instance). At first look, the interactions between EarthInc and the team leader during the expedition follow a coordinated distribution pattern, where the forecaster, by contract, is told to send information upon which the leader relies to plan his group's progress. In fact, the vast majority, if not all, of the emails (and SMS) sent by EarthInc to John and Georg consist of information about the weather parameters for the coming hours and days.

FREQUENCY OF MESSAGES EXCHANGED BETWEEN THE LEADERS AND THE FORECASTERS

With the exception of the second summit attempts, the comparison of the number of messages exchanged by e-mails between EarthInc and the leaders of the Broad Peak and Everest expeditions does not display significant differences (see Table 2 below).

Table 2. Number of messages exchanged during the Broad Peak and Everest expeditions

	Broad Peak	Everest
Emails (total)	46	57
Sender: EarthInc	37	50
Sender: leader of the expedition	9	7
Number of days of assistance (total)	34	49
Average frequency/per day	1.4	1.3
SMS (total)	34	-
Number of phone calls	3	4
Average duration of phone calls	3'01	3'47
First summit attempt	(June 21-27)	(May 14-19)
Emails (total)	12	11
Sender: EarthInc	8	7
Sender: leader of the expedition	4	4
SMS sent by EarthInc	7	-
Number of days of assistance	7	6
Average frequency/per day	1.7	1.8
Second summit attempt	(July 2-7)	(May 20-25)
Emails (total)	7	12
Sender: EarthInc	6	9
Sender: leader of the expedition	1	3
SMS sent by EarthInc	6	-
Number of days of assistance	6	6
Average frequency/per day	1.2	2

On average, 1.3 messages per day were sent/received during both expeditions. These messages were mainly coming from EarthInc: during the Everest expedition, Georg sent only seven and at Broad Peak, John sent nine. With the exception of the Broad Peak second summit attempt, the frequency of the messages increases during the summit attempt phases⁴, indicating the pressing need, in these critical phases, to get both accurate and up-to-date information. During their first summit attempts, 1.7 messages per day for Broad Peak and 1.8 messages per day for Everest were exchanged between the leader and EarthInc. During the second summit attempt, two messages per day were exchanged for the Everest expedition but only 1.2 for Broad Peak. This decrease for Broad Peak is difficult to interpret. One possible explanation is that John was more worried about his clients' health and about the tracing work than about the weather, which was friendlier than during his first summit attempt.

These messages are accompanied by SMS for John who could not read his emails during the summit push phases. Georg, on his side, preferred to be kept informed by emails, for he could "see the charts by [him]self" (Georg, post-expedition interview). Both leaders made short phone calls to EarthInc one and/or two days before the last phase of the ascent in order to get the latest forecasts and weather parameters. On the whole, with the exception of the frequency of the messages exchanged during the second summit push – which is higher between Georg and EarthInc than between John and EarthInc – the analysis of the numbers of messages of the two expeditions does not show significant differences.

A comparison of the content of the emails sent by the team leaders, as well as Peter's end of the phone calls, shows that the leaders and the forecasters construct different distributed leadership configurations as the expeditions unfold.

THE BROAD PEAK EXPEDITION AS COORDINATED LEADERSHIP

The relationship between the leader John and the forecasters of EarthInc follows a coordinated configuration: following the "directives" of the contract, the forecasters send weather forecasts to John, who, from time to time, asks for particular forecasts (of winds and snowfalls). When the weather was not as predicted by the forecasts, John provides detailed feedback about the actual weather conditions, displays discontent, and asks for explanations. This discursive pattern, in which the leader relies on implicit and sometimes explicit directives to ask for weather forecasts, and the forecasters answer with assertives about their predictions (or the weather models) develops during the acclimatization phase and remains, with some variants, quite stable during the two summits attempts.

Acclimatization

On June 7, 2012, after nine days of trekking, the Broad Peak team reached Base Camp (BC, 4900 m). From the 10th to the 19th, the team prepared the different camps (C1, 5700 m, C2, 6700 m, and C3, 7000 m), carried up the required materials, and progressively acclimatized to higher altitudes (see Picture 1 below).

4. Here the summit attempt phase begins when the team leader makes the decision to attempt the summit, not necessarily when they actually leave Base Camp. It ends when the team reaches the summit or stops the attempt.

Picture 1. The Broad Peak Camps

On June 14, John sent his first feedback to EarthInc. The forecasts of the 9th and 10th announced a few possible showers in the afternoon of the 11th and rather friendly weather on the 12th. On the 11th and 12th, however, it snowed so much so that the team was forced to return to BC on the 13th.

Email from John to EarthInc, 14/06, 06:15 (Swiss time)

Back to BC yesterday; until now, the reports are not very reliables⁵.

We started on the 10th with a report saying that "The jet stream will move further north into the Karakorum Region until the 11th and the pattern will change to anticyclonic. This will also lead to dryer conditions."

On the 10th, we climbed up to C1, the weather was as forecasted

11th: snow all day long

12th: snow until 2PM, better in the afternoon

13th: snow all day long

Yesterday, the report said snow for the 14th so we decided to go down to BC.

This morning, the sun shines and we are at BC!

To help us to take decisions, would it be possible: - to make the report at 2PM swiss time so we receive it at the end of the day for us. Sending a report at 7AM swiss time is not very useful for us as we have already taken a decision for the day (we are 3 hours ahead) - send a percentage a reliability for a forecast?

Thanks in advance.

John.

In his email, John expresses his discontent through an expressive ("until now, the reports are not very reliables") that is followed by detailed reports of the weather his team had had during their ascent to C3. These assertives, which systematically compare the forecasts with the actual weather conditions ("We started on the 10th with a report saying...", "11th: snow all day long...") may be taken as expressives in that they evaluate the forecasts' reliability. These assertives/expressives are followed by directives about when to send the

5. No corrections or editing was done for these e-mails.

forecasts and how to convey their reliability. This email is quickly followed by a rather long answer from the forecaster Roger.

Email from Roger to John, 1406, 11:03 (Swiss time)

Dear John,

Thank you for your email!

In order to improve the quality of future forecasts, we are currently comparing the past model results with the conditions you experienced.

As the chief forecaster is in the office until about noon, we could produce the forecast in the second half of the morning. Sending would be around 11am swiss time (today at 12am), as there are many radio interviews afterwards. Would that be a suitable solution for you?

Until now we tried to depict the probability by formulations like: "precipitation is likely to continue" OR "little precip still possible". We are currently working on a standard for this kind of formulations. I will discuss your input of using percentages instead of these formulations with Martin next week (he is on holiday this week). Until then we will add a percentage to the precipitation forecasts. Such a measure would reflect the agreement of the different models with each other. In addition we would capture your experience versus the model outputs in such a measure. However, please keep in mind that there is no usable mathematical formula to come up with such a measure as it includes too many factors. It rather reflects the forecasters determination of the likelihood of an event like a shower.

With kind regards.

The answer details the measures undertaken by EarthInc to improve the forecasts, to send them at an adequate time for John, and to provide a percentage of likelihood for weather events. The answer is made of assertives ("we are currently working on ...", "Until now we tried to depict the probability") but also commissives about EarthInc future actions ("Sending would be around 11am swiss time", "I will discuss your input of using percentages", "Until then we will add a percentage ...", "In addition we would capture your experience ..."). Following Cooren (2001) and Cooren and Fairhurst (2004), this exchange may be seen as displaying a subordinate relationship: the team leader assesses the forecaster's past performance through expressives and formulates directives about what the forecaster should do; then the forecaster describes what can be done and commits to a future course of action. At the end of his email, however, Roger reminds John that the percentage of reliability cannot include all relevant factors; instead it rather reflects the forecaster's confidence in his prediction. This directive, together with the length of the answer – that may be seen as floor dominance (Fairhurst, 2007) – shows how the forecaster, thanks to his particular expertise, resists entering into this subordinate relationship. A similar discursive pattern can be observed during the first summit attempt.

First summit attempt (June 21-27, 2012).

On June 20, after one night spent at C3 in very windy conditions, the team went back again to Base Camp where John wrote a detailed report of the weather conditions (assertives) to EarthInc and asked for weather trends (directives) for the following days: "we are now ready for summit after taking a minimum of 3 days of rest". On June 21, a cyclonic period (i.e., snow and thunderstorms) was announced for the 26th to 29th. John and his team decided to leave to the summit on the 22nd. He sent a short email to EarthInc where he announced their departure from Base Camp to the summit (assertives) and asked EarthInc to send the forecasts on the sat phone (directives).

The team is at C2 on June 23rd. While the wind is stronger than forecasted, John is optimistic: an SMS from EarthInc and a phone call confirm

that “the weather looks promising until the 25th”. The analysis of the conversation that took place before the first summit attempt on June 23rd between John and Peter the forecaster, displays some similarity with their last emails: John relies on assertives about the actual weather conditions and questions about future weather (directives); Peter relies on assertives to describe future weather parameters. The following two extracts illustrate this pattern and show that directives from Peter are scarce (mainly questions about the weather conditions at Broad Peak) and, when taking the form of suggestions, are ambiguous.

Extract 1. Phone call between Peter and John, June 23

5 Peter: Eh. Yes. I saw the satellite pictures. I saw clouds but it did not look like
6 they are really going up high in the air. I am surprised that it snowed. But did it
7 snow hard or hard just a bit?

John probably tells Peter that it is snowing and asks about snow forecasts. Peter (l. 5) confirms that he “saw the satellite pictures” but also asserts that he did not predict much snow so that he is “surprised” (expressive, l. 6). He then uses a directive to ask for feedback about the amount of snow John’s team has had (l. 6-7). John answers and then uses a directive back and questions Peter about the snow expected for the following hours, on the 25th and 24th. Peter’s answer is displayed in the following extract.

Extract 2. Phone call between Peter and John, June 23

12 Peter: It does not look like that the snow will go up really high. If I look at the
13 meteograms, it looks that the humid air is a bit lower and let me open the
14 meteogram very quick so I can explain it further eh it looks like the humid air
15 is going up to 7500m and above the air should be quite dry quite dry and I have
16 only slight signals of a bit of snowfalls and this remains similar also for
17 tomorrow and then Wednesday eh Wednesday excuse me the 25th that's
18 Monday and that's your planned summit day. At that day I suspect that clouds
19 will grow in the afternoon, at noon and in the afternoon and then they can reach
20 also the summit but before, the air at summit should be quite dry. [...] And for
21 tomorrow I eh think ehh that it will be quite good in the morning and some
22 clouds will be around still between 6500 to 7000, 7200 m, that's the forecast. I
23 don't think that snowfalls now you are having is showing or is sign of weather
24 change or something. I think it is, I think it is still quite stable, and for you and
25 it is not a signal for you to turn around and so if you can handle this, then
26 everything should be OK until the 25th.

From l. 12 to l.22, Peter uses assertives to describe what he is doing (“look at the meteogram”, l. 12-13; “open the meteogram”, l. 13-14) and how the humid air and the clouds should behave for the coming days (“the humid air is going up to 7500m ...”, l. 14-15; “clouds will grow in the afternoon, at noon ...”, l. 18-20; “some clouds will be around still between 6500 to 7000, 7200 m”, l. 22-23). While he is careful not to suggest that his forecasts are 100% valid (i.e. “It looks like”, l. 12 and 14; “I have only slight signals of”, l.15-16; “I suspect that”, l. 18, “the air at summit should be”, l. 20), he seems to become more confident as he completes the forecast, when he says “I think” (l. 20 and 24) and “I don’t think” (l. 23). At the end of the extract, he goes one step further when he mentions that “it is not a signal for you to turn around” (l. 25).

While, at first, this sentence can be heard as a directive – a suggestion – it is, in two respects, equivocal. Firstly, because it lies somewhere between an assertive (“it is not a signal”) and directive (“for you to turn around”) speech act, and, secondly, because it uses a negation, which should not be taken as equivalent to “It is a signal to go ahead” (see Searle, 1976). Although sounding like a directive, after a long passage where Peter seems to become more positive about his forecasts, the sentence is opened up to different interpretations (ranging from “I cannot tell you that you should stop” to “you can continue”). John

confirmed in his email of June 26 (see below) that he understood that "good weather was [still] expected for the coming days".

By the 24th, the team is at C3 (7200m). At midnight, on the 25th, the team left C3, but at 4 a.m., at 7500m, the team is forced to stop because of heavy snowfalls and zero visibility. With humor, the team writes on their blog, "We have to find our way in the storm, and no trace any more. This is the Pakistani anticyclone". On June 26, back at Base Camp, John sends Martin the following email.

Email from John to EarthInc, 26/06, 10: 54 (Swiss time)

Dear all,

Back to BC after an attempt to summit yesterday.

During those 3 days, the forecasts have been completely wrong, mainly humid air with a lot of precipitations:

On the 23rd, we left C1 under the snow at 6h30 AM. I called you on the 23rd to tell you that the weather we had was not matching the forecasts, you told me that good weather was still expected for the coming days

On the 24th, we wanted to established camp 3 at 7300m, we had to stop at 7000 in a very bad weather

On the 25th, we left C3 at midnight. At 4AM, 7500, no visibility, heavy snowfalls...

On the 10th of june, you already forecasted anticyclonic conditions. We had mainly snowfalls.

This time was the same!!!

What is the problem???

John.

John's email is similar to that of June 14. He, again, assesses EarthInc weather forecasts through expressives ("During those 3 days, the forecasts have been completely wrong") and assertives, comparing the forecasts with actual weather ("you told me that good weather was still expected for the coming days. On the 24th, [...] we had to stop at 7000 in a very bad weather"), that may also be interpreted as expressives.

Martin and Peter, in a long answer, express their apologies for the bad forecasts and, using assertives, detail the weather predictions before the team left the camp and during the ascent so that "a summit push seemed possible" and "there were no sign to cancel the mission".

Email from Martin and Peter to John, 26/06, 12: 11 (Swiss time)

Hi John

I just discussed the past weather forecast with Peter.

We are very sorry for the wrong weather forecasts! We are trying to find out what went wrong. Here is an explanation.

Initial position:

At the 21st of June the forecast model showed promising weather until the 25th of June, with increasing convection after the 26th. You shortened your resting days at BC and asked for an attempt on the 25th.

Deciding with these models, a summit push seemed possible.

Weather during your attempt:

During the following days the weather models showed fair conditions until the 25th. [...] The models did not show perfect conditions with low wind speeds and superb weather, but there were no signs to cancel the mission.

Humid air was shown at lower altitudes. [...] Showers and lots of snowfall were not shown. The air above 7500 meters looked very dry.

Conclusion:

At the Karakoram the subtropical jet (the one which lies at the moment

above Broad Peak) and the polar jet are very close together⁶. The polar jet is not far north. [...] During your whole expeditions it was hard to find stable conditions for a couple of days in a row. [...] During your attempt the weather models did not show elements to give us an evidence to abort the summit push.

We know it is very hard for you and we are sorry for that. But I think, without trying to find an excuse, the weather models did just not show the reality.

*Take care,
Peter, Martin*

The forecasters conclude with a description of the weather parameters at the Karakoram area and again express their regret for the poor predictions. While John's expressives and directives (for example, his question, "What is the problem?") frame a subordinate relationship, Martin and Peter's reply, through detailed answers about the weather models and parameters in the area, reaffirms EarthInc's expertise. John's reply acknowledges their work and expertise when he writes that "explanations of the jets are interesting" and "forecasts are not an exact science".

On the 28th, three clients and three Sherpas decide to go home. They are followed by another guide on July 1. The remaining "team" is now composed of 2 guides and 2 clients.

Second summit attempt (July 2-6, 2012).

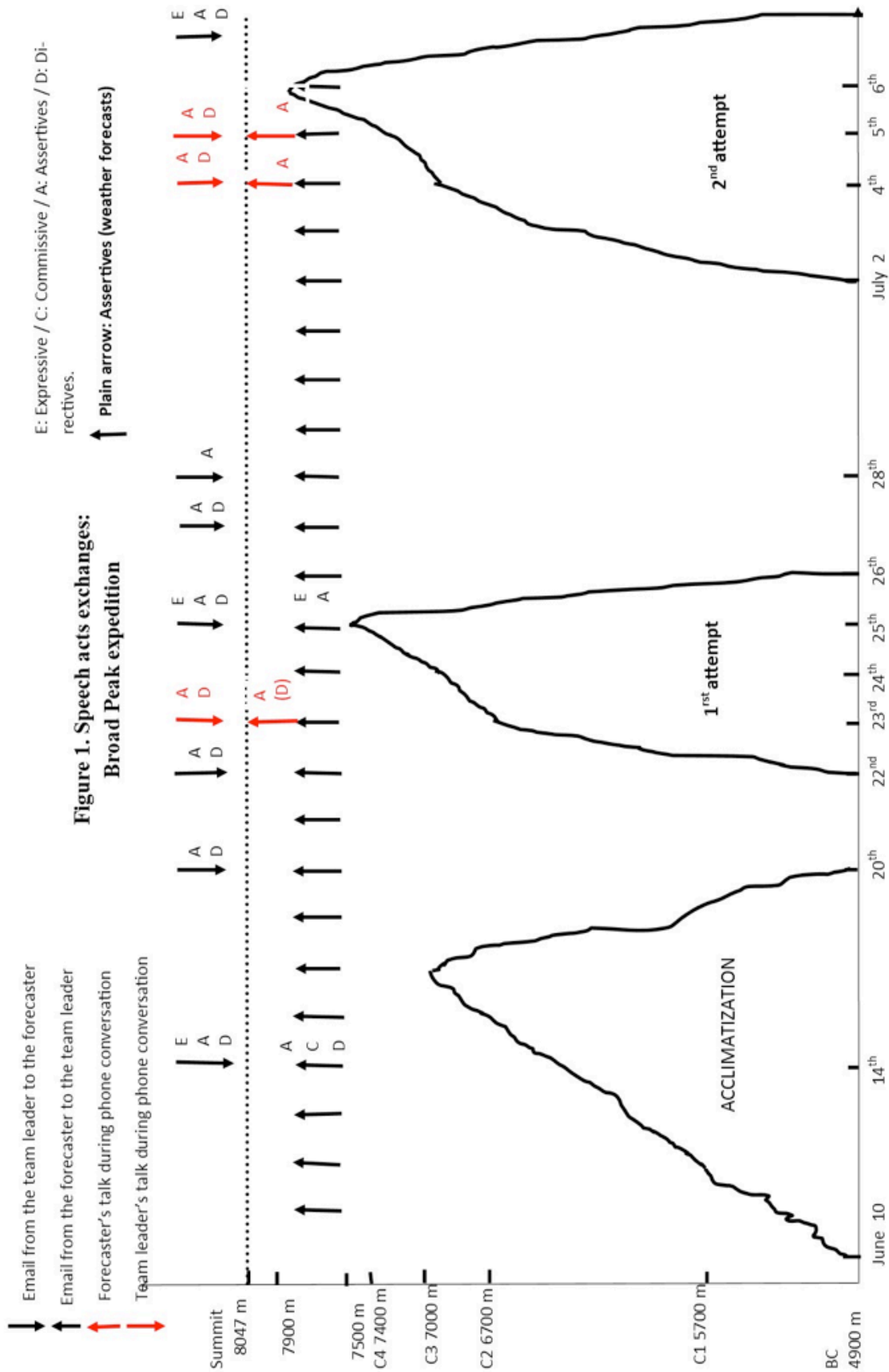
On June 28, John sends Martin an email saying that they will only be ready for a last attempt after a few days of rest, although good weather conditions are forecast for the coming days (assertives). He also asks for weather tendencies (directives).

On July 1, moderate winds are forecast for the 5th to the 8th. On July 2, the team (of four) and two other European mountaineers leave Base Camp. The forecasts now indicate decreasing wind speed. On the 4th, the team is at C3. On the 4th and the 5th, John calls Peter who confirms "nice weather [...] with a wind of 30Km/h for the 6th" (SkyInc's blog). The conversations display discursive patterns similar to those analyzed earlier, with John asking for precise forecasts for the wind and snow and Peter answering with detailed assertives. During the second conversation, Peter also questions John about the wind and snow at Broad Peak as he has heard about snowfall and wind at the Gasherbrum, a mountain located not far away from the Broad Peak.

On the 5th, the team set up C4 at 7300 m. By the 6th, John and another guide are alone: the two clients are too sick to continue and the two European mountaineers are suffering from frostbite. At 2 a.m., the remaining team left C4 but at 9:30 a.m. had to stop at the summit ridge, 7900 m, as "gusts [were] so violent that it [was] difficult sometimes to keep standing" (SkyInc's blog). On the 7th, John sent his final feedback to Peter, in which he expresses his "surprise" at finding such violent wind (around 80km/h) around the summit when Peter has told him that the wind should be around "30km/h". He concludes his email with a last directive to stop sending forecasts.

Overall, the interactions between the forecasters and John are dominated by assertive speech acts that take the form of assertions about future weather from the forecasters (see plain arrows in Figure 1 below). John's replies usually take the form of either 1) assertives about the actual weather conditions encountered when leaving Base Camp and directives that ask for particular forecasts and for the sending of information via SMS to the sat phone or 2) assertives about the actual weather, together with expressives of discontent about the lack of reliability of the forecasts and directives asking for particular measures, as well as reasons for the bad forecasts. While such directives and

6. According to the geography dictionary (geography.dictionary.org), jet streams are "relatively fast uniform winds concentrated within the upper atmosphere in a narrow band. The polar jet stream exists in the mid-latitudes at an altitude of approximately 10 kilometers". "The subtropical jet stream exists in the subtropics at an altitude of approximately 13 kilometers". "The polar jet stream flows from west to east at speeds between 110 to 185 kilometers per hour". The polar jet stream contributes to the high-speed wind (sometimes attaining 80-100km/h) observed at high altitudes in the Everest and Karakoram areas.



evaluative behaviors from John may be taken as indicative of a subordinate relationship, the forecasters' responses, which rely on commissives but also on lengthy, technical assertives displaying their expertise and directives (most of the time questions about the actual weather and, once, a suggestion), show how the forecasters resist entering into such a relationship. Altogether, the analysis shows how the team leader and the forecasters, through their discursive behaviors, quickly construct, and then reenact, a coordinated leadership configuration mainly relying on the team leader's directive and expressive speech acts and the forecasters' technical, expert, assertive speech acts.

The analysis of the team leader/forecasters exchanges during the Everest expedition displays a different leadership distribution and process.

THE MT. EVEREST NORTHERN RIDGE EXPEDITION: FROM COORDINATED TO COLLABORATED DISTRIBUTION

Basically, the relationship between the leader Georg and the forecasters of EarthInc also follows a coordinated configuration: following the "directives" of the contract, the forecasters send weather forecasts to Georg, who, from time to time, asks for particular forecasts (of winds and snowfalls) and/or provides a detailed feedback of the actual weather conditions. This discursive pattern develops during the acclimatization phase and is maintained during the two summit attempts. However, during their phone conversations, the forecaster, Peter, and the expedition leader, Georg, enact a different, more collaborative leadership configuration.

Acclimatization

The Everest team arrived at Base Camp (5182 m) on April 18, 2012, 12 days after their departure from Europe. After three weeks of acclimatization and progression to higher altitudes (Advance Base Camp, 6492 m, North Col, 7000 m, C2, 7500 m, C3, 8300 m, see Picture 2), on May 9, EarthInc announces "a small window" from May 17-18.

Picture 2. The Everest Camps (Northern Ridge)



The window is confirmed on the 12th and 13th by Peter. On the 14th, Georg, coming back from the North Col to Advance Base Camp, sends an email asking whether "it will get serious over the next week". This email, and the ones following, display similar discursive behaviors as those observed during the exchanges between John and the forecasters (see below).

Email from Georg to Martin, 14/05, 9: 31 (Swiss time)

hello Martin

I was on the north col the last three days to acclimate. During the last days, there was wind but mainly at 7300 m. At the moment in the abc, there are more gusts, but no crazy wind. Within the last few 3 days, there was wind in the height, but not crazy. I could imagine, that it will get serious over the next week, or what do you mean?

Georg reports on where he was ("I was on the north col") and what the weather conditions were ("there was wind ... there are more gusts...") through assertives then uses a cryptic sentence to ask about the forecasts ("it will get serious ... or what do you mean?"). The question is in fact understandable in the light of Martin's answer which confirms that "on the southern side, a first rush will form on May 17th", meaning that the weather conditions are met for a summit push (see below). Martin's reply is composed of detailed assertives about the weather forecast for the next day and ends up with a commissive where he engages to send information about the Monsoon from the Indian meteorological service.

Email from Martin to Georg, 14/05, 9: 31 (Swiss time)

Hello Georg

It is certainly slowly getting serious. On the southern side, a first rush will form on May 17th. Here the current forecast:

[...]

Summary and trend: The window from 16th to 19th seems to be stable. After 20th, the wind will get stronger again. The next window could come out around the 25th. The wind will mostly be stronger than 50 km/h from 20th to 24th.

Monsoon: At the moment, no sign of monsoon is to be seen yet. It was colder than normal over Tibet for a long time, the early/premature arrival of monsoon is not to be expected. We will get in touch with you if there are the first signs or the first official forecasts of the Indian meteorological service.

All the best!

First summit attempt (May 14-19, 2012).

On the 14th, Georg asks for more information about the wind (directives). Martin asserts that the wind will not exceed 30km/h on the 19th and the 20th, a wind speed that Georg considers as the upper limit for a successful summit ascent. On the 16th, the team left Advance Base Camp. Georg again asks for the latest wind updates (directives).

On the 18th, Georg called Peter at the North Col, as "there was much more wind than expected". During this short conversation, Peter's discursive behaviors which relied mainly on assertives about expected wind at the summit, and on one assessment of the situation ("The wind blows from the southwest. For you, as you said, it should be profitable but the wind will increase ..."), did not show any main differences with those observed in his conversations with John. Georg relies on directives and Peter on technical assertives about the weather, so that the relationship follows a coordinated configuration. The subsequent conversation appears as a turning point in this leadership relationship.

After this first phone call, Georg then came back alone to Advance Base Camp, where he could check emails and charts. He explained: “You want to see that your decision is correct” and “[...] that there [was] another window”. He also added that “it is easier to think at 4000 m than at above 7800 m” (post-expedition interview).

In this second phone call of the 18th, Peter first reports the risks of precipitation for the 23rd and the 24th then details the expected temperatures at the summit. The extract below occurs after this report.

Extract 3. Phone call between Georg and Peter, April 18

- 12 *Peter: Yes exactly, I agree that it is the best to start as early as possible. The*
 13 *wind increases already over the night. Then in the forenoon and at midday it is*
 14 *the strongest. The earlier you can start the better. Here I also have a value at 18*
 15 *ZULU from the 19th: 30-35km/h, three hours later 37-40 km/h, and another*
 16 *three hours later 40-45km/h. During the day it is going to stay in that range.*
 17 *[...]*
 18 *Peter: Yes that is OK. I think you will be doing the right thing trying to be as*
 19 *early as possible on the summit. That is good like that.*

Peter’s agreement (l. 12) probably follows Georg asking his opinion about starting the summit attempt early. The sentence contains an assertive (“Yes exactly, I agree ...”, l. 12) and a directive (“that it is the best to ...”, l. 12). This suggestion is explained further by a detailed report on the wind increase, that is first expressed in qualitative (“The wind increases already ... the strongest”, l. 12-14), then in quantitative terms (“a value at 18 ZULU from the 19th: 30-35km/h ...”, l. 14-16). In contrast with his suggestion to John during the Broad Peak expedition, Peter formulates a clear suggestion, repeats it (“The earlier you can start the better”, l. 14; “I think you will be doing the right thing ...”, l. 18), and concludes with an expressive that convey confidence in his opinion (“That is good like that” l. 19).

At Advance Base Camp, on the 19th, Georg again calls Peter who first confirms that the wind will reach 40-50km/h on the 19th and more than 50km/h on the 20th and that another window will open up between the 25th and 26th. The following extract, where Peter returns to the topic of the wind expected during the night of the 19th and the following day, confirms that Peter is incited by Georg to express a suggestion about what Georg and his team should do.

Extract 4. Phone call between Georg and Peter, April 19

- 19 *Peter: Yes exactly. That also goes along with the model. It increases in the*
 20 *night and then rather decreases again so that today in the afternoon/evening it*
 21 *is at 50 and then in the night, it decreases to 40 but then freshens up again and*
 22 *possibly reaches up to 50/60km/h during the day tomorrow. That means if you*
 23 *want to reach the summit tomorrow, you will have to start early ... but it is*
 24 *critical.*
 25 *[...]*
 26 *Peter: If the people are able to return and will have enough strength to go up*
 27 *again, then I think it is better to hope for the 25/26th because then it looks*
 28 *significantly better.*

After a short report⁷ through assertives on the wind for the following hours (“it increases ... tomorrow”, l. 19-22), Peter uses a directive as he tries to make a suggestion. However, it is an equivocal directive as while it implies a certain course of action (“you will have to start early”, l. 23), it is also an expressive that assesses this course of action as “critical” (l. 23-24). The next sentence is much clearer. Peter is very careful not to say something that could be interpreted as a command or a definite view in such difficult circumstances, as his directive means stopping the attempt and trying again (“if the group ...”, l. 26-27). But he ends up with a directive advising the group to change their plan (“I think it is

7. For EarthInc, the actual weather conditions of Everest were in fact much less difficult to ascertain than for Broad Peak. First of all, EarthInc was assisting more than ten teams on Everest during the same period, all potential sources of feedback. Second, while the weather conditions on Everest were under the strong influence of the jet stream this year, they were “indifferent”, so it was still much more difficult to predict the weather in the Karakoram area (Martin, post-expedition interview).

better to hope for the 25th/26th ...", l. 27-28). This suggestion is not initiated by Peter but follows Georg's request for Peter's opinion about his project to change the plan. In short, the two extracts show how Georg, in soliciting Peter's opinion about his plan in the context of the weather forecasts, makes the conversation pattern evolve so that Georg shares his decision process with Peter. Georg then decides to bring the whole group down. On the 20th, Georg sends feedback to EarthInc and his discursive speech acts, although expressing satisfaction with EarthInc forecasts, are similar to those displayed in John's feedback email.

Email from Georg to EarthInc, April 20, 5:44 (Swiss time)

Good morning peter from the blowing wind or the one who has pointed at something! I have woken up around 6 am and I think "shit" no wind? Then one hour after I got up, I see there was quite a bit of snow.

In the base camp, 5-10 cm of fresh snow. But what's important is that the wind is blowing at 50-60 km only from approx. 7500-7800 m. Thus, the weather report is still a hit . . . What you have predicted has exactly arrived. [...]. Now, I hope you will be right again the coming days. . .:-)

sincerely yours Georg

PS: thanks very much, you have saved human lives again.

Georg first reports on the actual weather conditions and his reactions to it when back at Base Camp ("I have woken up around 6 am and I think "shit" no wind?", "what is important is that the wind is ...") and, through assertives/expressives, displays satisfaction regarding EarthInc forecasts ("Thus, the weather report is still a hit ... What you have predicted has exactly arrived", "thanks very much, you have saved human lives again"). Perhaps because he is satisfied with the reports, he does not end his feedback with directives as John does. On the whole, however, the email mainly assesses the forecaster's performance, which can, at first sight be interpreted as the enactment of a subordinate relationship (Cooren, 2001). While the analysis of the content of the emails exchanged shows how the forecasters rely on their technical expertise to build a coordinated leadership, those of the previous and subsequent phone conversations during the Everest expedition demonstrate how, from the 18th onward, the forecaster and the team leader enact collaborated leadership. This distribution does not substitute but complements or superimposes itself on the coordinated configuration from time to time. This same process can also be observed during the second summit push.

Second summit attempt (May 20-25, 2012).

Weather reports on the 20th and 21st confirmed that the northern jet stream was going to leave Everest from the 25th to the 27th. Georg decided to attempt the summit on the 25th, "so that [they] could have a day of reserve" (post-expedition interview). He also decided to stay at Advance Base Camp so that he was "sure if that if there is again some weather change that we can react very fast" (post-expedition interview).

On the 24th, Georg left Advance Base Camp for the North Col at 7000m so he could see with binoculars the progression of the team and talk to them on VHF radio. He asked Peter for wind updates by email and then called him. Peter first made a detailed report through assertives on the wind: he explained that he did not expect an increase in wind speed during the morning but that it was still possible in the afternoon. As displayed in the following extract, Peter goes as far as suggesting the 25th (rather than the 26th) for a summit day.

Extract 5. Phone call between Georg and Peter, May 24

23 Peter: [moisture] will come tomorrow afternoon but I assume that it is going to be 24 less critical as on the 26th [...] There will be cumulus clouds but not as high as on 25 the 26th. In that case tomorrow has better conditions.

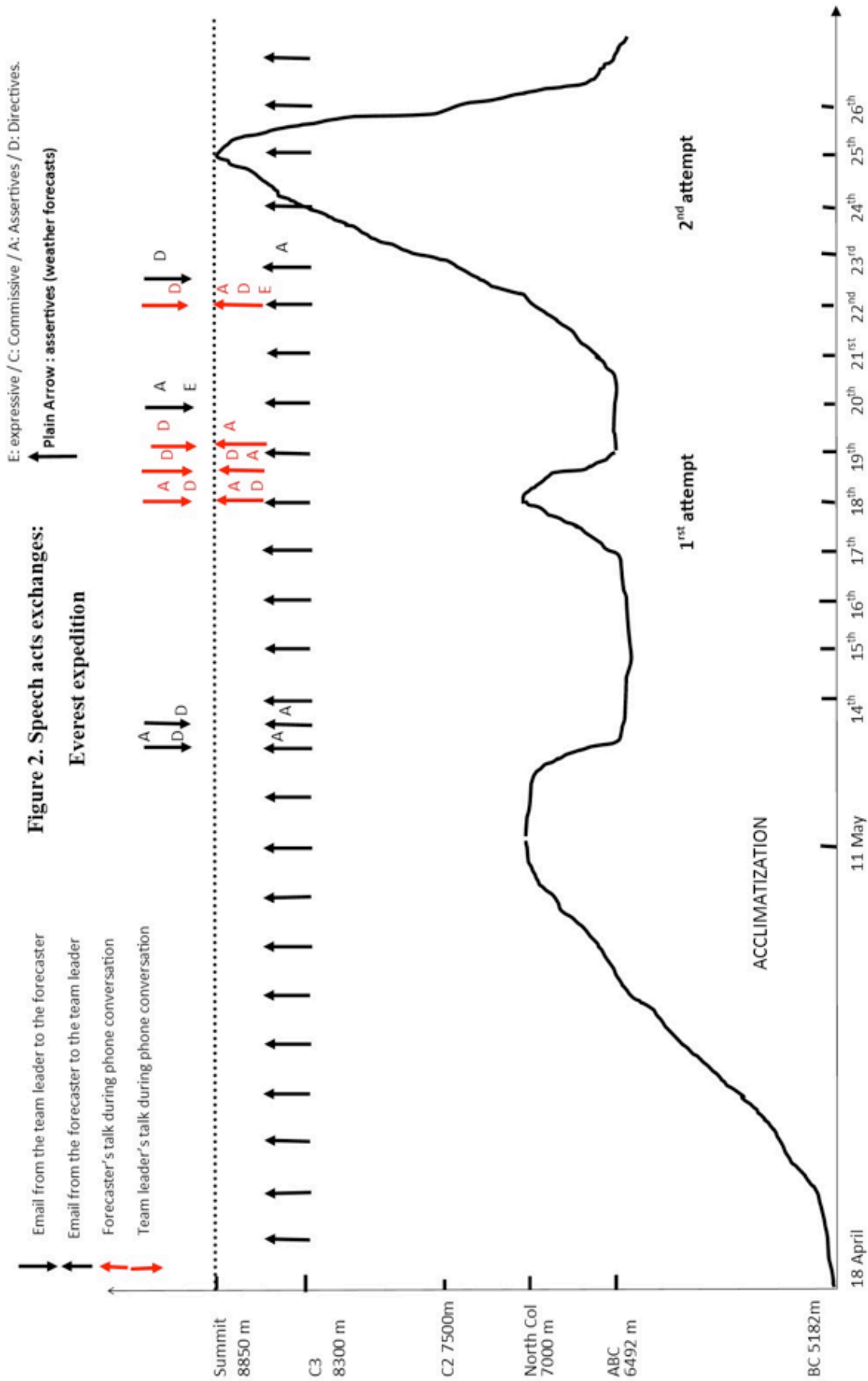
Peter details the moisture expected for the 25th and 26th and then concludes that “it is going to be less critical as on the 26th” (l. 23-24), so the 25th “has better conditions” (l. 25), which can be heard as both expressive and directive. Contrary to the previous conversations however, Peter’s suggestion does not follow Georg’s questioning, thereby corroborating the collaborated distribution of leadership begun during the first summit attempt. The team reached the top of the world on May 25.

To summarize, the interactions between the team leader and the forecasters during the Everest expedition display a similar discursive pattern as those observed during the Broad Peak expedition (see Figure 2). Georg relies on assertives (sometimes expressives) about the actual weather as well as directives, while the forecasters use technical assertives about the forecast weather, so that the relationship basically follows a coordinated configuration. From the 18th however, the conversations show that Georg uses directives to ask not only for the expected weather but also for Peter’s opinion on his project: Georg progressively enrolls Peter in his decision process so that the forecaster also relies on directives to make suggestions about what to do. This discursive pattern, where the forecaster and the team leader actually discuss the plan of actions, displays collaborated distribution (Spillane, 2006). This configuration does not substitute for the coordinated configuration observed but superimposes itself on it when decisions have to be taken.

Table 3 below synthesizes the results obtained for both expeditions.

Table 3. Forecaster and team leader practices during their interactions-Synthesis

	Broad Peak expedition	Everest expedition
Emails sent by		
EarthInc	Assertives: about the weather forecasts	Assertives: about the weather forecasts
Team leader	Assertives: feedback about the weather conditions	Assertives: feedback about weather conditions or the group’s or the leader’s past actions
	Directives: questions/requests about the forecast weather	Directives: questions/requests on the forecast weather
	Expressives: assessment of the forecasts	Expressives: assessment of the forecasts
Phone conversations		
The forecaster	Assertives: about the weather forecasts Directives: questions about the forecast weather	Assertives: about the weather forecasts Suggestions on what course of actions to follow
Team leader (presumed)	Assertives: about the actual weather forecasts	Assertives: about the actual weather forecasts
	Directives: questions about the forecast weather	Directives: questions on the forecast weather and on the group’s plan
Leadership distribution	Coordinated distribution	Coordinated and collaborated distribution



DISCUSSION

This research aims to understand how leaders, having different expertise, co-perform distributed leadership through their discursive acts. Relying on an in-depth analysis of the speech acts in the emails and phone calls of the forecasters and team leaders during two high-altitude expeditions, the research contributes to the understanding of the “in-between” of leadership in four respects.

Firstly, the research contributes to the understanding of distributed leadership as a situated practice (Crevani, et al., 2010; Fletcher, 2004), a perspective in which empirical studies are still the exception. It provides an unprecedented description of the patterns of speech acts through which leaders perform distributed leadership. Complementing Fairhurst (2007) and Cooren and Fairhurst's (2004) analysis of leadership distribution in time, our analysis demonstrates that different forms of leadership can be distinguished through the analysis of the temporal pattern of speech acts. Two sets of discursive patterns and related leadership distribution are outlined:

- *Coordinated distribution* in which a leader (or a contract, cf. Cooren, 2001), relying on directives, asks another leader to perform a particular action; a demand that the latter meets through assertives (in this case, the weather forecasts) and commissives (about future actions that the forecasters will undertake); a sequence that ends up with the first leader assessing the performance of the second through expressives and sometimes providing more detailed feedback through assertives. While this coordinated distribution is close to the subordination sequence described by Cooren (2001; Cooren & Fairhurst, 2004), our analysis shows that the content of the assertives formulated by the second leader relies on his specific technical knowledge that helps him resist a subordination schema and thus enact distributed leadership.
- *Collaborated distribution* in which a leader relies on directives to ask a second leader his opinion about what can or should be done so that the second leader also formulates expressives (appreciations of the situation or the course of actions) and directives to suggest a particular course of action.

While the use of speech act categorization provides a broad picture of the difference between collaborated and coordinated distribution, it is too rudimentary to differentiate them clearly. Our analysis shows that it is important to complement speech act analysis with that of 1) the temporal sequencing during the entire period necessary to complete the task and 2) the content of the assertives in particular, in that they give insight into the relative knowledge or expertise asymmetry between leaders. First, the analysis of the temporal ordering of speech acts over the two expeditions outlines two different leadership configurations (coordinated/coordinated and collaborated); a distinction that could not have been evidenced if one had focused on a shorter moment within the expeditions. Second, the technical knowledge that the forecasters use to answer the Broad Peak expedition leader's question about the reason for unreliable forecasts appears crucial to differentiating distributed leadership from hierarchical subordination in the situations observed. Previous studies have demonstrated that subordinates, although sometimes having particular skills and expertise, are usually reluctant to directly oppose or respond to their superiors (see Bisel, Messersmith & Kelley, 2012 about the mum effect in the leader-subordinate interaction). While knowledge and power are known to be intrinsically related (see Laine & Vaara, 2007, for a Foucauldian study on power and discourse in organization), further research is needed to appreciate how, and to what extent, relying on expertise during interactions has an effect on the leadership

configuration that develops. One may speculate that if expert knowledge may help participants to resist entering into a subordinate relationship, it may also hinder the development of collaborated leadership when used as resources in a power struggle relationship. Empirical studies on the discursive practices displayed by experts when collaborating vs. coordinating with people of different expertise are needed.

In this perspective, the use of different analytical tools, such as discourse analysis (derived from conversation analysis, Potter, 2004) and ethnomethodology⁸ in particular, (cf. Whittle and Mueller, 2011) could provide deeper insights into the discursive practices through which leaders enact leadership.

Secondly, our results shed new light on the enactment of distributed leadership. The detailed process analysis conducted in this research shows that coordinated and collaborated leadership do not substitute completely for each other – contrary to what previous empirical studies in education have argued (see Gronn, 1999; Spillane, 2006; et al., 2003; 2004). While, during the Broad Peak expedition, John and the forecasters quickly enacted and maintained a coordinated leadership, in the Everest expedition, Georg, with the same forecasters, activated the same configuration yet suspended it during short conversations before the summit push, thus enacting collaborated leadership. One may advance that the maintaining of a coordinated leadership configuration during the Broad Peak expedition might have been due to the lack of reliability of the forecasts, which incited the team leader to maintain an assessment and feedback sequence and coordinated leadership. Yet the in-depth analysis of the interactions between the forecasters and the team leader during the Everest expedition shows that for the first summit attempt, the forecasts were not reliable either, such that the team had to go back to Base Camp and the team leader maintained an assessment/feedback sequence. Further research with the same leaders would be instructive to find out whether the configurations would remain the same or differ from one expedition to another. The results also invite us to study distributed leadership over longer periods, as snapshots or shorter sequences of observation cannot shed light on all of the various forms that a relationship may take.

Thirdly, our research allows us to take a few steps away from a determinist concept of leadership distribution. Both Gronn (2002) and Spillane (2006) have suggested that forms of distributed leadership depend on the physical proximity of leaders (i.e., whether they are co-present or not) and on task interdependency (cf. Thompson, 1967). Our results seem to move away from this concept. On the one hand, while not without incidence, the task interdependency (in our case, a sequential interdependence between the forecasters and the leaders) and the coordinated leadership it induces do not preclude the leaders from sharing decisions so that their interactions evolve towards a collaborated distribution. On the other hand, and in contrast with Spillane et al.'s (2004) hypothesis, our research shows that temporal and physical distances are not obstacles to such leadership configurations. Here, we are consistent with researchers on communication technologies and virtual teams, who have underlined that the use of rich-media technologies such as phone conversations and video conferences permits real-time decisions and reciprocal interdependency (Bell & Kozlowski, 2002: 25; 42). This does not mean, however, that the use of these technologies necessarily leads to collaborated leadership distribution. Our research shows that although sharing very similar conditions (in terms of task interdependency, type of expedition, etc.), the team leaders and forecasters enacted rather different leadership distributions. Though not without influence, neither the task interdependency nor the media technologies in themselves dictate the leadership distribution which, in our cases, resulted first and foremost from the leaders' and forecasters' speech act patterns during their interactions. In this perspective,

8. Although inspired by these analytical commitments, we could not use such methods as parts of the conversation between the forecaster and the leader were missing.

while our results show that different leadership configuration may be enacted from the same initial contractual situation – i.e., the commercial contract between the forecasters and the team leaders – it would be interesting to investigate whether different initial situations (a more collaborative one, for instance) might also lead to different leadership distributions.

Our final set of contributions is methodological. Empirical studies on management during high-altitude mountaineering usually rely on secondary data and/or interviews conducted after the expedition (Kayes, 2004; Tempest, Starkey & Ennew, 2007; Elmes & Frame, 2008). To our knowledge, our study is unique in that it relies on naturally-occurring data (Silverman, 2006). Though not without limitation, our analysis also shows that speech act analysis contributes to a more nuanced and detailed understanding of leadership distribution (cf. Fairhurst, 2011: 502). While Spillane (2006: 84) underlined that “shifting the focus from an exclusive focus on the actions of leaders to the interactions in leadership practice poses major methodological puzzles for scholars and practitioners”, our research outlines, with others (see Clifton, 2012; Choi & Schnurr, 2014), that such investigation is both possible and instructive.

On the whole, our research contributes to a better understanding of the discursive pattern through which leaders enact distributed leadership. Following Elmes and Frame (2004), we do not consider these results exemplary or illustrative of (p. 234) “the inherently complex value-laden ‘messy problems’ that dominate governance and executive decision-making in the modern corporate office or broader society”. This does not imply that no lesson can be learned from our studies. On the contrary, we contend that if climbing Mount Everest or Broad Peak relies on distributed forms of leadership, such configurations are certainly enacted by managers in other, less hostile, less constrained environments. This article, then, is an invitation to pursue both teaching on and research into distributed forms of leadership.

REFERENCES

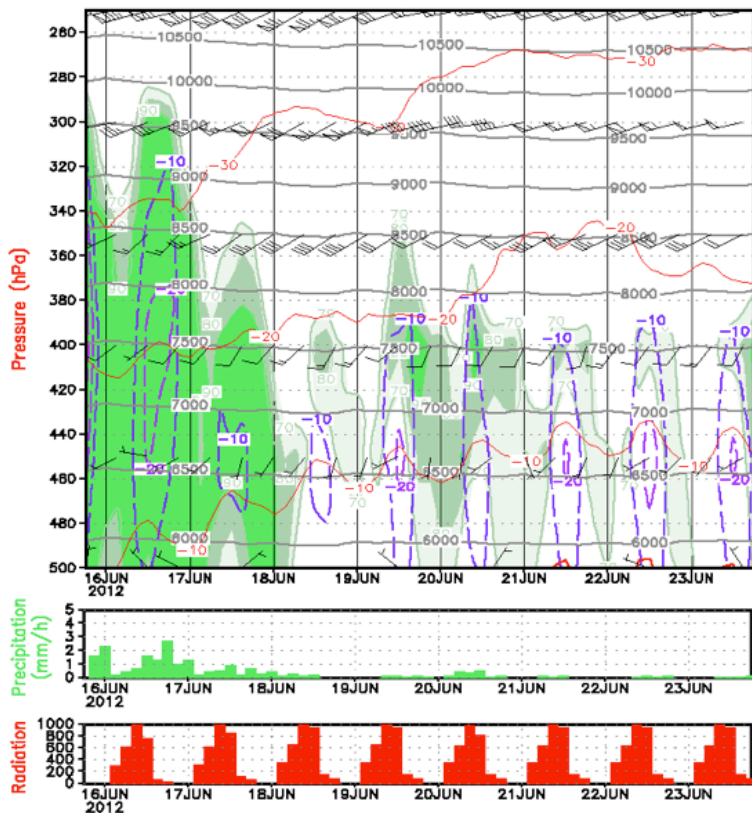
- Avolio, B.J., Walumbwa, F., Weber, T.J. (2009). Leadership: Current theories, research, and future directions. *Annual Review of Psychology*, 60, 421-49.
- Bell, B.S., & Kozlowski, S.W. (2002). A typology of virtual teams: Implications for effective leadership. *Group & Organization Management*, 27(1), 1-49.
- Bisel, R., Messersmith, A., Kelley, K. (2012). Supervisor-subordinate communication: Hierarchical mum effect meets organizational learning. *International Journal of Business Communication*, 49(2), 128-47.
- Carson, J.B., Tesluk, P.E., & Marrone, J.A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of Management Journal*, 50(5), 1217-34.
- Choi, S., & Schnurr, S. (2014). Exploring distributed leadership: Solving disagreements and negotiating consensus in ‘leaderless’ team. *Discourse Studies*, 16(1), 3-24.
- Clifton, J. (2012). A discursive approach to leadership: Doing assessments and managing organizational meanings. *International Journal of Business Communication*, 49(2), 148-68.
- Cooren, F. (2001). *The organizing property of communication*. Philadelphia, PA: John Benjamins.
- Cooren, F., & Fairhurst, G. (2004). Speech Timing and spacing: The phenomenon of organizational closure. *Organization*, 11(6), 797-828.
- Crevani, L., Lindgren, M., & Packendorff, J. (2007). Leadership, not leaders: On the study of leadership as practices and interactions. *Scandinavian Journal of Management*, 26(1), 77-86.
- Crevani, L., Lindgren, M., & Packendorff, J. (2010). Shared leadership: A postheroic perspective on leadership as a collective construction. *International Journal of Leadership Studies*, 3(1), 40-67.
- Dreyfus, H.L., & Dreyfus, S. E. (2005). Peripheral Vision: Expertise in Real World Contexts”, *Organization Studies*, 26(5), 779-782.
- Elmes, M., & Frame, B. (2008). Into the hot air: A critical perspective on Everest. *Human Relations*, 61(2), 213-41.
- Fairhurst, G.T. (2007). *Discursive Leadership. In conversation with leadership psychology*. Thousand Oaks, CA: Sage.
- Fairhurst, G.T. (2009). Considering context in discursive leadership research. *Human Relations*, 62(11), 1607-1633.
- Fairhurst, G.T. (2011). Discursive approaches to leadership. In Bryman, A., Collinson, D.L., Grint, K., Jackson, B., & Ulh-Bien, M. (Eds.) *The Sage Handbook of Leadership* (pp. 495-507). London: Sage.
- Fairhurst, G. T., & Connaughton, S. L. (2014). Leadership: A communicative perspective. *Leadership*, 10(1), 7-35.
- Fairhurst, G.T., & Grant, D. (2010). The social construction of leadership: A sailing guide. *Management Communication Quarterly*, 24(2), 171-210.

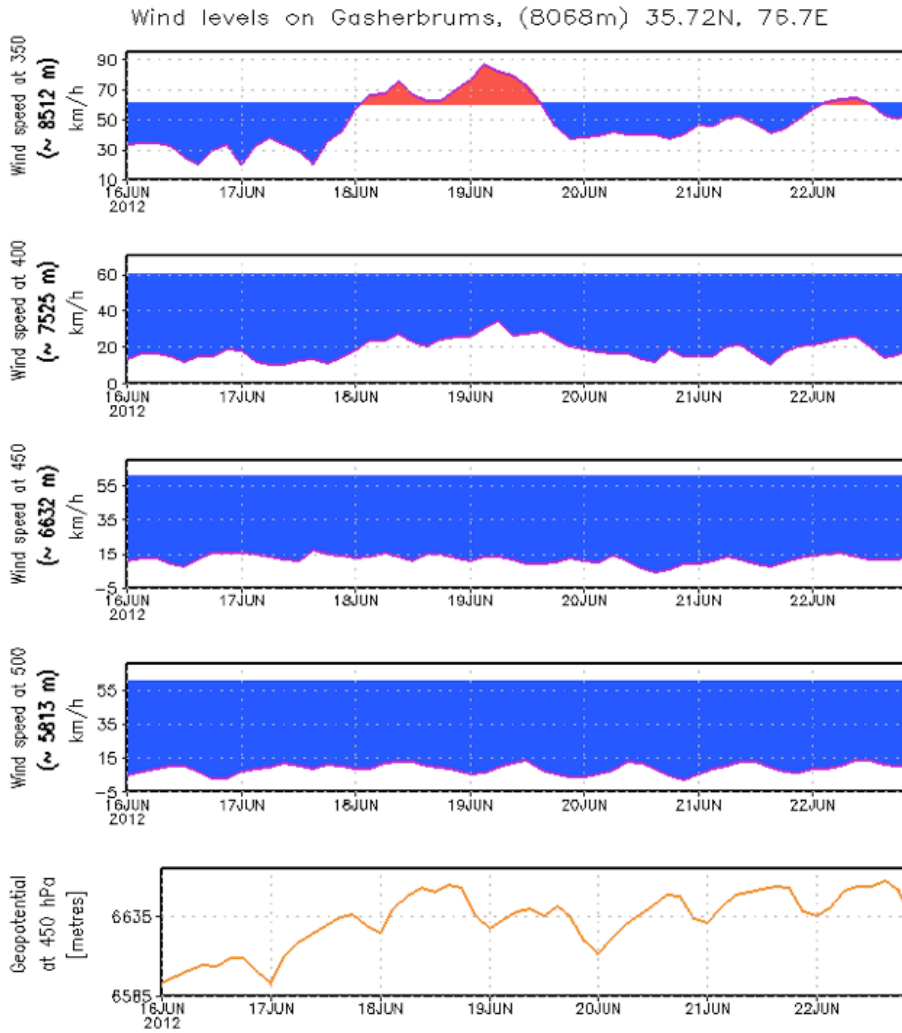
- Fairhurst, G.T., & Uhl-Bien, M. (2012). Organizational discourse analysis (ODA): Examining leadership as a relational process. *The Leadership Quarterly*, 23(6), 1043-62.
- Fletcher, J.K. (2004). The paradox of postheroic leadership: An essay on gender, power, and transformational change. *The Leadership Quarterly*, 15(5), 647-41.
- Gibson, C.B., & Gibbs, J.L. (2006). Unpacking the concept of virtuality: The effects of geographic dispersion, electronic dependence, dynamic structure, and national diversity on team innovation. *Administrative Science Quarterly*, 51(3), 451-95.
- Giezendanner, Y., & Guais, F. (2007). *Le routeur des cimes*. Chamonix : Editions Guérin
- Greimas, A.J. (1987). *On meaning: Selected writings in semiotic theory*. London: Frances Pinter.
- Gronn, P. (2009). Leadership configurations. *Leadership* 5(3), 381-94.
- Gronn, P. (2002). Distributed leadership as a unit of analysis. *The Leadership Quarterly*, 13(4), 423-51.
- Gronn, P. (1999). Substituting for leadership: the neglected role of the leadership couple. *The Leadership Quarterly*, 10(1), 41-62.
- Heritage, J. (2004). Conversation analysis and institutional talk. Analyzing data. In Silverman D., (Ed.). *Qualitative Research. Theory, Method and Practice* (pp. 222-245). London: Sage Publications.
- Hinds, P.J., & Bailey, D.E. (2003). Out of sight, out of sync: Understanding conflict in distributed teams", *Organization Science*, 14 (6), 615-632.
- Kayes, D.C. (2004). The 1996 Mount Everest climbing disaster: The breakdown of learning in teams. *Human Relations*, 57(10), 1263-1284.
- Klein, K.J., Ziegert, J.C., Knight, A.P., & Xiao, Y. (2006). Dynamic delegation: Shared, hierarchical and deindividualized leadership in extreme action teams. *Administrative Science Quarterly*, 51(4), 590-621.
- Kozlowski, S.W., & Ilgen, D.R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, 7(3), 77-124.
- Krakauer, J. (1997). *Into thin air*. New York, NY: Anchor Books.
- McDermott, R.P., & Roth, D.R. (1978). The social organization of behavior: Interactional approaches. *Annual Review of Anthropology*, 7, 321-345.
- Mehra, A., Smith, B.J., Dixon, A.L., & Robertson, B. (2006). Distributed leadership in teams: The network of leadership perceptions and team performance. *The Leadership Quarterly*, 17(3), 232-245.
- Morgeson, F.P., DeRue, D.S., & Karam, E.P. (2009). Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of Management*, 20(10), 1-39.
- Pearce, C.L., & Conger, J.A. (2003a). *Shared leadership: Reframing the hows and whys of leadership*. London: Sage.
- Pearce, C.L., & Conger, J.A. (2003b). All those years ago. The historical underpinnings of shared leadership. In Pearce, C.L., & Conger, J.A. (Eds.), *Leadership: Reframing the hows and whys of leadership*. (pp. 1-18). London: Sage.
- Pearce, C., Manz, C., & Sims, H.P. (2009). Is shared leadership the key to team success? *Organizational Dynamics*, 38(3), 234-238.
- Potter, J. (2004). Discourse analysis as a way of analysing naturally occurring talk. In Silverman, D., (Ed.). *Qualitative research: Theory, method and practice*, 2nd Ed (pp. 200-221). London: Sage Publications.
- Searle, J.R. (1976). A classification of illocutionary acts. *Language in Society* 5(1), 1-23.
- Searle, J.R. (1986). *Minds, brains and science*. Harvard, MA: Harvard University Press.
- Silverman, D. (2004). *Qualitative research: Theory, method and practice*, 2nd ed. London: Sage Publications.
- Silverman, D. (2006). *Interpreting qualitative data*, 3rd ed. London: Sage Publications.
- Spillane, J.P. (2006). *Distributed leadership*. San Francisco, CA: Jossey-Bass, John Wiley & Sons.
- Spillane, J.P., Diamond, J.B., & Jita, L. (2003). Leading instructions: the distribution of leadership for instruction. *Journal of Curriculum Studies*, 35(3): 533-543.
- Spillane, J.P., Halverson, R., & Diamond, J.B. (2004). Towards a theory of leadership practice: a distributed perspective. *Journal of Curriculum Studies*, 36(1): 3-34.
- Tempest, S., Starkey, K., & Ennew, C. (2007). In the Death Zone: A study of limits in the 1996 Mount Everest disaster. *Human Relations*, 60(7), 1039-1064.
- Thompson, J. (1967). *Organizations in action: Social science bases of administrative theory*. New York, NY: McGraw-Hill Inc.
- Weick, K.E., & Roberts, K.H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 38(3), 357-381.
- Whittle, A., & Mueller, F. (2011). Bankers in the dock: Moral storytelling in action. *Human Relations*, 65(1), 111-139.

APPENDIX A. AN EXAMPLE OF THE FORECASTS SENT BY EARTHINC

06/17/12 10:29	<p>Sender: Martin</p> <p>Hello John!</p> <p>General Situation: The jet is getting weaker and moving north. The pattern becomes anticyclonic in the next week and the weather more stable.</p> <p>Wind: 17th moderate wind speed with around 40 km/h at 8000 meters. 18th: The jet is crossing Broad Peak. Wind picks up to about 60 km/h in the summit area. 19th and onwards: Wind is weaker again but still around 40 km/h at the summit. To the 22nd the wind might be stronger again. This is quite uncertain and has to be confirmed by the next model runs.</p> <p>Weather: 17th: The air is still quite humid. In the afternoon cloudy and some snow. Precipitation tendency: 60% 18th and 19th: Partly sunny with some clouds in the afternoon. Precipitation tendency in the afternoon 30%. From 20th on: Friendly mornings. Below 7500 Meters some convection in the afternoon. Precipitation tendency in the afternoon: 20%.</p> <p>Temperature: Rising about 7 degrees in the next days. At summit to around -18 degrees.</p> <p>All the best!</p> <p>Martin</p>
----------------	---

GFS Profile 18Z15JUN2012
BroadPeak (35.81,76.57)





www.meteoexploration.com

Florence Allard-Poesi is Professor of Management and director of Institute de Recherche en Gestion (I. R. G) at the University Paris-East. Her research focuses principally on sensemaking and power in organizations and the role that discursive practices play in this context. She also works on the methodological and epistemological problems that these issues present. Her work has been published notably in *Organization*, *Scandinavian Journal of Management*, *@grh*, *Management International*, *M@n@gement*, *Economies & Sociétés*, in *Méthodes de Recherche en Management* (R. A. Thiétart ed.), 4th edition, Paris: Dunod and in the *Cambridge Handbook of Strategy as Practice* (D. Golsorkhi, L. Rouleau, D. Seidl and E. Vaara eds.), 2nd ed., Cambridge University Press.

Yvonne Giordano is Professor in Organizational Studies and Management at University of Nice Sophia-Antipolis. She is member of GREDEG. Her research work focuses on nature-based organizations and professions dealing with risky contexts such as high mountain guides, rescue teams and meteorological forecasters. She took part in a previous ANR project which studied a French expedition in Patagonia (<http://www.projet-darwin.com/>).

Acknowledgements. This work is part of the Ledepagod project, which was supported by a grant from the ANR. The authors are very grateful to all mountaineers and forecasters that participated in this research. We would like to thank our colleagues Gérard Koenig, UPE, IRG, and Lise Arena, Sophia-Antipolis University, GREDEG, who played an active part in the data collection. We are also grateful to M@n@gement's editor, Sébastien Liarte, and the reviewers for their comments and suggestions, which have greatly contributed to deepening our understanding of the case studies. Earlier versions of the paper were presented at the IRG Writing Seminar on 16 December 2014, the 23rd AIMS Conference, Rennes on 26-28 May 2014 and the First Workshop on Process Studies, ESCP, Paris on 18-19 February 2015. We would like to thank the participants, and in particular Hervé Laroche, for their encouragement and suggestions. Our language editor, Andi Simon, was of invaluable help in editing our manuscript.