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(Article begins on next page)

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Observation-Projet: a professional tool for caretakers. Two experiences in Italian day care settings

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Abstract

Ability to reflect on practice is a key element of early childhood professionalism and is positively associated with the quality of educational services. *Observation-Projet* (Fontaine 2008, 2011) is a method designed to support practitioners' reflection through the observational process. The method adapts the required scientific procedures to the concrete demands faced by practitioners in their everyday activities. The paper presents the results of two projects developed to teach the practitioners the use of *Observation-Projet*. The principal aim of Study 1 was to explore how the space was currently used by the children and to

intervene on adults' position to enhance children's use of space. In Study 2, the caretakers chose to focus on the organization of afternoon activities, a time of the day identified as difficult to manage, reducing the number of children per play group and better organizing the type of activities offered to children. The results confirm both the intervention efficacy and the *Observation-Projet* effectiveness as an instrument for reflecting and intervening on educational contexts.

L'une des compétences importantes pour les professionnel(le)s de la petite enfance est la capacité de réfléchir sur sa propre pratique quotidienne: il s'agit d'un élément crucial pour la qualité des services éducatifs. L' *Observation-Projet* (Fontaine, 2008, 2011) c'est une méthode conçu pour supporter les professionnel(le)s dans cette activité de réflexion par le biais de l'observation systématique. Cette méthode adapte les procédures de l'observation scientifique aux requêtes concrètes de la pratique quotidienne des professionnel(le)s. Notre contribution présente les résultats de deux projets mis en place pour le training à l'*Observation-Projet*. Le premier (Study 1) concerne l'intervention pour supporter l'utilisation de l'espace dans la salle de recréation à travers la position occupée par les adultes. Le deuxième (Study 2) évalue les résultats d'une réorganisation de l'après-midi finalisée à réduire la taille des groupes et à mieux structurer les activités proposées aux enfants. Les résultats confirment soit l'efficacité de l'intervention réalisée, soit la valeur de l'*Observation-Projet* en tant qu'outil de réflexion et d'intervention dans les settings éducatifs.

La capacidad de reflexionar sobre su propia práctica es uno de los elementos claves de la profesionalidad educativa de la primera infancia, y está fuertemente asociado a la calidad de los servicios educativos. La *Observation-Projet* (Fontaine, 2008, 2011) es un método diseñado específicamente para apoyar la reflexión de los educadores / maestros a través del uso de la observación. Este método adapta los procedimientos de la investigación científica a las necesidades concretas en el uso diario de los operadores. Nuestro artículo presenta los resultados de dos proyectos desarrollados para la capacitación de educadores para el uso de la *Observation-Projet*. El objetivo principal del estudio 1 fue explorar cómo los niños utilizan el espacio para el juego y como una intervención limitada sobre la posición de los educatores/maestros en este espacio podría modificar las interacciones y actividades. En el estudio 2, el equipo educativo ha optado por centrar la organización de las actividades de la tarde, momento particularmente crítico del día, lo que reduce el tamaño de los grupos de

niños y la organización de una actividad más estructurada que se ofrece. Los resultados confirman tanto el efecto de las intervenciones, así como la posibilidad de utilizar la *Observation-Projet* como un instrumento para la reflexión y la intervención en los contextos educativos de la primera infancia.

Die Fähigkeit über die eigene praktische Tätigkeit reflektieren zu können ist eine Schlüsselkompetenz frühpädagogischer Fachkräfte, welche positiv mit der Qualität früher Bildungsangebote korreliert. *Observation-Projet* (Fontaine 2008) ist eine Methode, welche diese fachliche Reflektion durch Beobachtungsprozesse unterstützen soll. Diese Methode passt die erforderlichen wissenschaftlichen Verfahren den konkreten Anforderungen der täglichen Praxis der Fachkräfte an. Der vorliegende Artikel präsentiert die Ergebnisse zweier Projekte, in welchen die Handhabung von *Observation-Projet* den Fachkräften vermittelt wurde. Hauptziel von Studie 1 war die Untersuchung der kindlichen Nutzung des Raums und die Intervention auf die räumliche Position der Erwachsenen mit dem Ziel der Förderung der kindlichen Nutzung des Raums. In Studie 2 fokussierten sich die Fachkräfte auf die Organisation der Aktivitäten am Nachmittag – eine Tageszeit, welche als schwer zu organisieren identifiziert wurde – indem die Anzahl Kinder pro Spielgruppe reduziert und die Art der angebotenen Aktivitäten besser organisiert wurden. Die Ergebnisse bestätigen sowohl die Wirksamkeit der Intervention als auch die Effizienz von *Observation-Projet* als Instrument zum Reflektieren von und Intervenieren in Bildungsprozessen.

Keywords
Crèche, observation training, spatial arrangement, critical thinking, evidence-based practice

Introduction
The literature on cognitive and affective outcomes of day care in children clearly shows that good quality day care is an adequate developmental context and may even act as a protective factor when family conditions are not optimal (NICHD 1997, 2001, 2005; Scopesi and Viterbori 2008). The quality of educational services is associated with the ability of early childhood practitioners to plan, and reflect on, the organization of the day care setting they

operate within (Musatti and Meyer 2011). Furthermore, ability to reflect on practice is a key element of early childhood professionalism in general (Dalli 2008; Oberhuemer 2005; Schön 1983; Urban 2008).

The professional use of observation can assist caretakers in reflecting on their practice, with a range of objectives including: monitoring the development of individual children, evaluating the organization of the environment, planning educational activities, etc. In addition, as demonstrated by the Loczy experiment (Appel and David 2008; Pierrehumbert 2012; Pikler 1988), caretakers' ability to observe must be activated if they are to reflect on a professional model of individualized relationships with infants and toddlers that fulfils children's need for a secure base at day care while maintaining and promoting continuity in their relationship with their parents.

Despite its strategic importance, observation is often difficult to implement in everyday practice: systematically observing children is a time-consuming activity, and without targeted supervision, the findings may be difficult to interpret and apply to the real-life setting. In addition, caretakers may require training in distinguishing between systematic and professional observation and the "naïve" unplanned observation that they spontaneously engage in. Thus, there is a need for researchers to design effective tools to assist caretakers in observing both educational contexts and children (see, for example, *[name deleted to maintain the integrity of the review process]* 2012; Bove 2009; Tobin, Wu, and Davidson 2000).

In this perspective, it is critical to start out from a rigorous definition of observation in the day care context: although the child care context places some constraints on observation, a number of key methodological features must be respected for the tool to be effective. The concept of observation in general involves an intentional focus on specific elements chosen as relevant. It is important to distinguish observation from the mere perception of stimuli, which may be an unconscious process; in addition, observation is more than "paying attention to",

because it requires intentional selection of relevant events. Scientific observation is characterized by systematic data collection, that is to say the observer must precisely define the object of observation and gather data in an objective manner (excluding distorted or inappropriately selected observations).

Therefore, using observation in day care settings requires the following components to be in place: precise identification of an observational object and its indicators; design of an observational tool – a *check-list* – composed of indicators agreed on by all the practitioners; and data collection procedures that exclude inappropriate data selection and provide for inter-rater coding and agreement. Such a process is highly time-consuming and generally requires supervision to ensure appropriate interpretation of the results and translation of the findings into practice. Thus, tools designed to facilitate practitioners in conducting systematic observation are both necessary and valuable.

Our paper proposes a new method, *Observation-Projet* (Fontaine 2008, 2011), designed to support practitioners through the observational process. The method adapts the required scientific procedures to the concrete demands faced by professional caretakers in their everyday activities.

Observation Projet: **the method and its theoretical background**

Observation-Projet is an action-research method (Lewin 1944; Pine 2008). It has been developed by Anne Marie Fontaine[1] – on the basis of her research in the field of developmental psychology and her experience in training professional caretakers – as a tool for answering specific questions and for enhancing the management of everyday practice: for example, in order to acquire in-depth knowledge about a specific child, reorganize a work space or an activity setting, reflect on the ways practitioners intervene with children and act on contexts, etc.

6

The objective of this method is to provide shared data on which caretakers can reflect in order to solve educational problems and take decisions. Thus, the method involves the caretakers' team in all the steps of the research: it is critical that the practitioner team jointly design the observation procedure and discuss the results that emerge. From a pedagogical point of view, this kind of team-work supports professionals' reflexive thought, with potential good relapse on the day care quality, as we discussed before (Musatti and Meyer 2011).

Considering different theoretical perspectives on observation (Michiels-Philippe 1984; Cohen, Stern, and Balaban 1997), Fontaine's model (2008, 2011) is based on ethological observation. Since this method is highly expensive and time consuming, the Observation-Projet adapts it to real life constraints, using simplified check-list and data analysis, but still maintaining scientific accuracy, mainly through sampling strategies and inter-observer agreement.

Observation-Projet usually comprises four steps, ideally involving the entire practitioner team:

(1) choice of the problem to be investigated and definition of an operative question to be answered;

(2) creation of shared observational tools to answer the question and planning the observation;

(3) implementation of the observation;

(4) reflection on the implications of the observation data.

Construction of the observational tool and coding systems is essential to proper implementation of the observation. These instruments are designed to prevent distortion in the selection of behaviors and indicators and to enable a sufficient amount of representative information to be gathered. Three conditions facilitate the collection of valid data:

(1) explicit selection: on the basis a specific topic, a small number of aspects are rigorously identified as relevant to the key research question and observed one by one;

(2) systematic procedure: a small number of aspects are observed in the same way (e.g., maintaining the same situation, the same categories, the same timing, etc.), over several observation sessions, in order to build up a representative and undistorted picture of the phenomenon;

(3) simple procedure: observational instruments should be designed to enable rapid collection of clear information and to facilitate data analysis and interpretation of findings.

Furthermore, professional observation is possible only when observing is acknowledged as real work, so that practitioners specifically dedicate time to conducting it (Fontaine 2008, 2011).

The construction of the tools is the most demanding part of *Observation-Projet*, while implementing the observation and interpreting and discussing the results are easier steps in the process. In any case, the key to success lies in working as a team: the results emerging from the observations should be discussed together in order to define solutions for the problem initially identified by the work group.

In sum, *Observation-Projet* can be a powerful tool in everyday educational practice, because it allows objective data to be collected from the context to inform subsequent interventions.

The use of *Observation Projet*: two experiences in Italian day cares

Our paper reports on the use of *Observation-Projet* in two different studies at Italian day care facilities, aimed at addressing two different problems: setting and lay-out of furniture (Study 1) and organization of afternoon activities (Study 2).

Bronfenbrenner highlighted the role of the material and organisational environment in shaping relational features (microsystem encompasses persons, roles and physical context). Ethological research mainly stressed the influence of environment on quality of children's play and wellbeing. Research in this field considered different environmental aspects, as the

rate child/space to play in (Blurton 1972; Smith and Connolly, 1980), the caretakers' visibility (Legendre 1995, Legendre and Fontaine 1991), the quality and quantity of play materials (Fontaine 2005), the different stress factors in the environment (Legendre 2001, 2003): all these studies demonstrated the influence of environment in shaping children's social interaction, children's use of the space and perceived stress conditions. Moreover, research developed in day care settings enlighted that the quality of the environment and of planning by the practitioner team was positively associated with well-being in both children (see for instance: Legendre 2003; Geoffroy, Côté, Parent, and Séguin 2006; Sajaniemi et al. 2011; Sims, Guilfoyle, and Parry 2006) and adults.Thus, positive influence of adequate environment in granting play activities and children's wellbeing was well established from previous research, and it could have a long-term influence on child development, although this is only one of the factors influencing the overall development.

Study 1

This project took place in 2009 at the day care center of a small town near Turin, in Piedmont (Italy). The initial meetings with the team of caretakers were focused on identifying the target situation and constructing a context-adapted observational tool. The work team decided to focus on the management of the common play space, poorly organized and differentiated, in which the children had a number of free play sessions in the course of the day, but especially in the periods immediately before and after lunch. In particular, we observed children during the free play session that took place between lunch and the afternoon nap. The principal aim of the project was to explore exactly how the space was currently used by the children and plan any innovations required to enhance their use of space.

We observed the effect of two different interventions, namely modifying the organization of the environment by changing the layout of the existing furniture, and positioning the caretakers differently in the space. The findings relating to organization of the

environment have been described elsewhere (*[names deleted to maintain the integrity of the review process]* 2010; *[names deleted to maintain the integrity of the review process] 2011*); we report here on the data regarding the position of caretakers in the room.

Prior to the study, the caretakers were in the habit of staying all together in a particular corner of the room (Figure 1, position A): during our intervention, the caretakers decided to spread themselves out, taking up positions near each of the play corners (Figure 1, positions A, B, and C) so that an adult was located close to all the play areas and the children had reassuring and easily accessible reference figures available to them all about the room (Legendre and Fontaine 1991, Fontaine 2005, 2010).

[Figure 1 near here]

Method

The study involved five caretakers and 23 children (aged from 21 to 40 months at the first observation). A 49-month-old child who suffered from a developmental delay was also present; he was included in the observations because they were not about children's developmental characteristics.

We conducted eight observation sessions using the *scan sampling* method: each session lasted about 30 minutes and consisted of sequential scans of all children (Fontaine 2008, 2011), each of the same set duration (ten seconds) and in a predefined order, so as to have the same number of intervals per child for each session. Thus, our data set consisted of our observations of individually coded targeted behaviors. The observation sessions were videotaped and coded by an experienced observer (the second author) and the coded data was then subjected to statistical analysis. For each interval, we coded each of the dependent variables: specifically we obtained three different codes, one for each of the observed behaviours (*use of space*, *type of activity*, and *type of interaction*, see below for detailed descriptions). However, the number of *observations* per interval and per dependent variable

was subject to variation on account of missing data, given that it was not possible to code all of the videotaped images. Moreover, when we considered one space only, the differences in the number of observations could be due to children's different use of the place. This was the reason why we used percentages of behaviors for our analysis.

Five of the observation sessions were also coded by the caretakers, and inter-rater agreement was calculated for all three dependent variables, to verify both the caretakers' ability to use the observational tool and the reliability of the coding system. Cohen's K, assessing concordance between the experienced observer and the caretakers, showed basic agreement regarding the coding of children's behavior (use of space, K= .85; type of activity, K= .68; type of interaction, K= .60).

In this study, we considered the adults' positions in the playroom to be the independent variable. This variable was measured using two categories:

- *Free* condition: spontaneous positioning; usually all the caretakers stayed together at the same location (near the bench, position A, Figure 1), moving to other locations within the room only as necessary.

- *Corners* condition: the caretakers intentionally positioned themselves at the corners of the room, in order to be better spread out around the space the children were playing in (positions A, B and C, Figure 1)

Four observation sessions were conducted without intervening to alter the caretakers' positions within the room (*Free* condition). During the other four sessions, the adults' changes of position were predefined (*Corners* condition). To partially compensate the Hawthorne and novelty effect (Gillespie 1991), the second slot of observations started three weeks after the change.

The dependent variables describing the children's behavior were: how they used the play *space*, that is to say, the different areas of the room utilized during play; their *activities* (physical activity, structured play, social activity or inactivity); and their *interactions*, that is, whether they were engaging in negative or positive behaviors with other children or adults, observing others or not interacting at all (see the coding system outlined in Table 1).

Table 1 near here

Results

The data showed that, in general, the adults' positions influenced children's use of space (Table 2). In the *Free* condition, in which adults usually congregated in the space around the *adults' bench*, moving elsewhere in the room only when strictly necessary (e.g., to tend to crying children, manage conflicts, etc.), the children primarily engaged in physical activity such as running around the room. On the contrary, in the *Corners* condition, in which adults were better spread out around the space, the children made use of all the play corners in the room, particularly *Play Space 1* and the *Ball Pool*).

Table 2 near here

Moreover, the *Corners* condition led to reduced physical activity, especially near the *Ball Pool* and *Play Space 1* (Table 3), close to the two new positions taken up by caretakers. Conversely, structured play increased in these spaces, though not significantly.

Table 3 near here

The final aspect explored was the type of interaction engaged in by the children. In the *Corners* condition, positive interactions with other children and with adults increased, especially in two portions of space that were near the new positions occupied by the caretakers: the *Soft Corner* and *Play Space 2* (Table 4). Furthermore, in these corners negative interactions disappeared completely, although they had also been rare in the *Free* condition.

Table 4 near here

12

Discussion

Consistently with the existing literature (Campos-de-Cervalho and Rossetti-Ferrara 1993; Fontaine 2010; Legendre and Fontaine 1991; Musatti and Mayer 2011), our findings demonstrate that adults' positions within the play room influences children's use of space, activities and interactions. The setting modification implemented here represented a very simple yet effective change: adults were found to exercise an indirect regulatory function on children's behavior simply by being uniformly present and visible in the room. In particular, the enhanced presence and accessibility of the adults led the children to increase their quiet play and reduce their non-goal directed motor behavior. This also meant that they were more likely to engage in social activities, in which the adult fulfilled the role of both active interlocutor and catalyst for positive interaction among children.

Discussion of these findings with the caretakers enhanced their awareness of the importance of taking into account and consciously planning their own positions in the room, alongside implementing targeted organization of furniture and settings.

Study 2

The second project took place at a great company day care facility in Piedmont, in 2011-2012. The caretakers at this centre chose to focus on the organization of afternoon activities. This time of the day was identified as complex and difficult to manage as a result of several factors, including the number of children (highly variable from day to day), organization of care activities (not clearly defined), availability of the various spaces (constrained by existing cleaning arrangements), etc. For these reasons, it was considered important to devote attention to an issue that involved and affected the entire caretaker team as well as most of the children enrolled at the day care center. In particular, the research question identified was: did the existing settings make the afternoon a rich educational experience for the children or was it just time spent waiting for their parents to collect them?

Method

Study 2 involved 12 caretakers, the day care center coordinator, and 47 children (aged from 8 to 37 months at the first observation).

The first block of observations lasted three months; then the team of caretakers discussed the observations, and decided on and implemented an intervention phase over a two-month period; finally, a second block of observations was conducted over a further two months. In all, we collected four observations per child (two before and two after the intervention); each observation lasted five minutes and was videotaped and coded by an experienced observer (the second author). Each five-minute observation was divided into 30 intervals of 10 seconds. For each interval, the observer coded each of the dependent variables (*children's activities* and their *interactions*; see below for a detailed description). The coded data was then subjected to statistical analysis. A different number of *observations* was obtained for each of the dependent variables, due to missing data caused by ambiguous or unclear videotaped images that were not possible to code. Moreover, when we considered one space only, the differences in the number of observations could be due to children's different use of the place. This was the reason why we used percentages of behaviors for our analysis. The caretakers also coded a small number of observations as part of an observational training procedure. Inter-rater agreement was calculated for 27 observations. Cohen's K showed that concordance between the experienced observer and the caretakers was moderate (type of activity, K= .57; type of interaction, K= .47): it is likely that some features of the checklist were not completely clear to all the caretakers although the whole team had participated in the construction of the observational tool.

This was an action-research study and after the first block of observation sessions, the practitioner team decided to modify the organization of the afternoon session. In effect, it was inappropriate to apply the organization of the morning session to the afternoon: the number of

caretakers usually decreased after lunch, as did the number of children. Furthermore, the latter were collected from the day care center at a range of different times throughout the afternoon. The intervention involved modifying the following aspects of how the afternoon session was organized:

(1) choice of the spaces in which children could play;

(2) the creation of ad hoc groups of children, taking into account:

- their age,

- the time at which each child was scheduled to leave the day care center,

- the main group (*sezione*) each child usually attended in the morning;

(3) the timetable for the afternoon, i.e. how to distribute the time between periods in which children were divided into subgroups and periods in which they were all brought together;

(4) the role of caretakers: managing play activities with children vs. focusing on interacting with the families as they came to collect the children;

(5) the type of activities offered to children (which in principle should be interesting and well organized).

Overall, the aim was to allow children to take part in quiet and educationally stimulating activities, in small groups, with the caretakers from their morning group (*sezione*) where possible. Given the complexity of the planned intervention, we carried out a preliminary evaluation regarding the potential to bring about effective change by intervening in two areas: specifically, we observed the effect of reducing the number of children in the ad hoc groups and of enhancing the organization of play activity. The dependent variables in the post-intervention phase were the *number of children* in the group (under or over ten), and the *type of play activity* caretakers proposed to children (*free or guided*).

With regard to the number of children, we hypothesized that:

- the smaller the groups, the more the children would be inclined to concentrate on structured activities;

- the smaller the groups, the more the children would interact with each other and the more adults could intervene to support their interactions.

With regard to the type of play activity, the afternoon session was originally intended to be a free play period, but the caretakers had the perception that many children just wandered aimlessly about the room without engaging in specific activities: we therefore proposed more structured activities, hypothesizing that the more structured the play, the more children would make constructive use of toys. In line with this hypothesis, we also tested how the changes affected the children's behavior, in terms of both their *activities* and their *interactions* with other children, viewed as a further set of dependent variables (see the coding system in Table 5). To partially compensate the Hawthorne and novelty effect (Gillespie 1991), the second slot of observations started six weeks after the change.

Table 5 near here

Finally, we asked the caretakers and the day care coordinator to individually complete an anonymous questionnaire with open questions in order to evaluate the efficacy of the intervention and their satisfaction with it.

Results

What aspects of the afternoon session effectively changed as a result of the intervention?

In line with the planned aims of the intervention, key changes took place in the organization of the afternoon activities. Specifically, the proportion of time that children spent in small groups increased significantly from 41% to 81%, while the time spent on guided activities increased from 22% to 51% (Table 6).

Table 6 near here

What changed in the children's behavior?

We observed the effect of the changes just reported on the quality of the children's experience. We found a higher level of engagement with the activities proposed by the caretakers, and a significant reduction in the time spent wandering around the room without engaging in specific activities or looking at peers going home with their parents (Table 7).

<div align="center">Table 7 near here</div>

With regard to interaction, negative interactions among children decreased and positive interactions increased when the adult participated in a structured activity with them; furthermore, children spent less time observing caretakers, and more time observing caretakers interacting with other children (Table 8).

<div align="center">Table 8 near here</div>

Caretakers' comments

Caretakers' comments on the intervention are reported in Table 9.

<div align="center">Table 9 near here</div>

Caretakers perceived several aspects of the experience to be useful, especially the training received and the use of observation (67%), along with the opportunity provided by *Observation-Projet* to discuss and exchange views with colleagues regarding the organization of their day care practices and their interventions with children (58%).

A significant percentage of caretakers were also positive about the new organization of the afternoon session and the enhanced wellbeing deriving from it. Nevertheless, critical aspects were also reported: principally, organizational issues concerning both the amount of time spent on observation and discussion of observations, and initial resistance to changing consolidated routines. Minor difficulties were reported regarding specific aspects of the observation, such as potential interference in video recordings (8%) or the risks of over-interpreting observation data (8%).

Finally, a high percentage of caretakers saw potential for using *Observation Projet* again in the future to address everyday pedagogical and organizational issues (67%) or to identify solutions for critical situations (25%). Nevertheless, they believed that expert supervision would remain necessary to ensure proper use of the tool.

Discussion

The intervention that we and the practitioner team decided to implement was complex and involved several organizational aspects of day care practice during the afternoon period. For this reason, caretakers reported initial difficulty in accepting and making the operational changes agreed. However, the results were positive in relation to the objectives we had set: our data indicated that change effectively took place to a significant degree, and caretakers valued the consequent impact on the quality of daily practice. The specific changes brought about by the intervention increased children's enjoyment of the afternoon period as well as their level of interest and participation. The organization of smaller ad hoc groups of children, as well as the enhanced planning of time, play activities and spaces, led the children to engage in structured activities with increased interest and to interact more positively with their peers and caretakers (Fontaine 2005).

Concerning the use of the new observational method, the caretakers viewed the experience as valuable but demanding. *Observation-Projet* gave them the opportunity to discuss important educational and professional themes with their colleagues and to increase their knowledge about the children in their care and about their own professional role in the day care setting. However, they considered this method difficult to use without an expert supervisor to coordinate the contributions of team members and manage the various phases in the process. The work team found the use of video footage to be highly valuable in that it enabled situations of interest to be viewed repeatedly and discussed with colleagues.

General discussion

Systematic observation is an important and useful instrument for educational service practitioners, and may be applied to many different situations. Nevertheless, observation is a difficult tool to introduce into daily practice: *Observation-Projet* (Fontaine 2008, 2011) is designed to offer a practical and effective tool allowing systematic observation to be incorporated into professional practice and expertise. Our results confirm its effectiveness as an instrument, although some problematic aspects remain to be addressed.

A first remark concerns the usability of the tool: the satisfactory level of agreement between experienced and inexperienced observers shows that the *Observation-Projet* method may be used by caretakers themselves to good effect. To ensure the effectiveness of *Observation-Projet*, it is critical that professional caretakers take an active part in designing the coding scheme, translating the initial questions into observable and precisely defined indicators (Fontaine 2008, 2011).

In addition, our data indicates that even very simple changes in the educational setting can produce detectable changes in children's behavior, as Study 1 demonstrates. Thus, it is important for caretakers to dispose of tools allowing them to objectively assess the effect of an educational intervention. Systematically observing the effects of variations in the layout of space, or in the organization of a specific day care routine, enables immediate evaluation of the impact of change, instead of proceeding by trial and error in the search for an ideal solution.

Regarding the planning of play activities, our data confirms the importance of careful reflection by the team on the spatial positioning of adult practitioners in the play room (Fontaine 2010; Musatti and Meyer 2011). On the basis of the results obtained using *Observation-Projet*, the practitioners engaged in deeper reflection about the organization of the environment, in terms of the layout of space and the kind of materials the children had at their disposal. Acting on these aspects of day care organization is most important, because the

quality of the environment and of planning by the practitioner team is positively associated with well-being in both children and adults, as we discussed before. In fact, in Study 2, the caretakers positively evaluated the observational work and the organizational changes that had facilitated enhanced experience for both adults and children; however, at the same time, they reported that designing an observational framework could be highly demanding for the work team. Nevertheless, taken overall, *Observation-Projet* proved to be a tool that can play a strategic role in enhancing practitioner reflection, in line with the recent literature on the topic (Dalli 2008; Oberhuemer 2005; Urban 2008). In sum, construction of an observational framework is a useful experience that promotes practitioners' reflection on their own professionalism and their awareness that aiming for and acquiring the skills required for independent observation is a process that must be shared by the entire work team.

Nevertheless, our research presented some limits due to the characteristics of our intervention.

We only presented two examples of the use of Observation Projet as observational tool for practitioners in day care, and future research may support its efficacy and usefulness, also comparing it to other tools based on different theoretical perspectives on observation. Moreover, we analysed interactions in a broad and general manner, although useful for our purposes: future research could use *Observation Projet* focusing on more detailed analyses of interactions within play settings.

 Our results were consistent with the research on the effect of environment and organisation change on child's interaction and play activities, although we dealt with little samples and specific conditions. Limits of little samples are to be considered in generalising our results. Nevertheless, our main objective was to improve the possibility for the caretakers' team to catch the effect of their own behaviours and organisation choices on children's behaviour, and to help them reflecting on their own practice. Finally, we did not collected data on children's individual performances, then we cannot discuss the effect of change on children's learning: this aspect is very interesting to analyse, but it was not among the intervention objectives we established with caretakers' team.

Notes

1. Anne Marie Fontaine, professor of Developmental Psychology at the University of Paris X – Nanterre, carried out research for many years at one of the most important European laboratories in developmental psychology, the *Laboratoire de psychobiologie de l'enfant de l'École pratique des hautes étude* (EPHE) in Paris, under the direction of René Zazzo.

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152.

Figure 1. Floor Plan of the Play Space
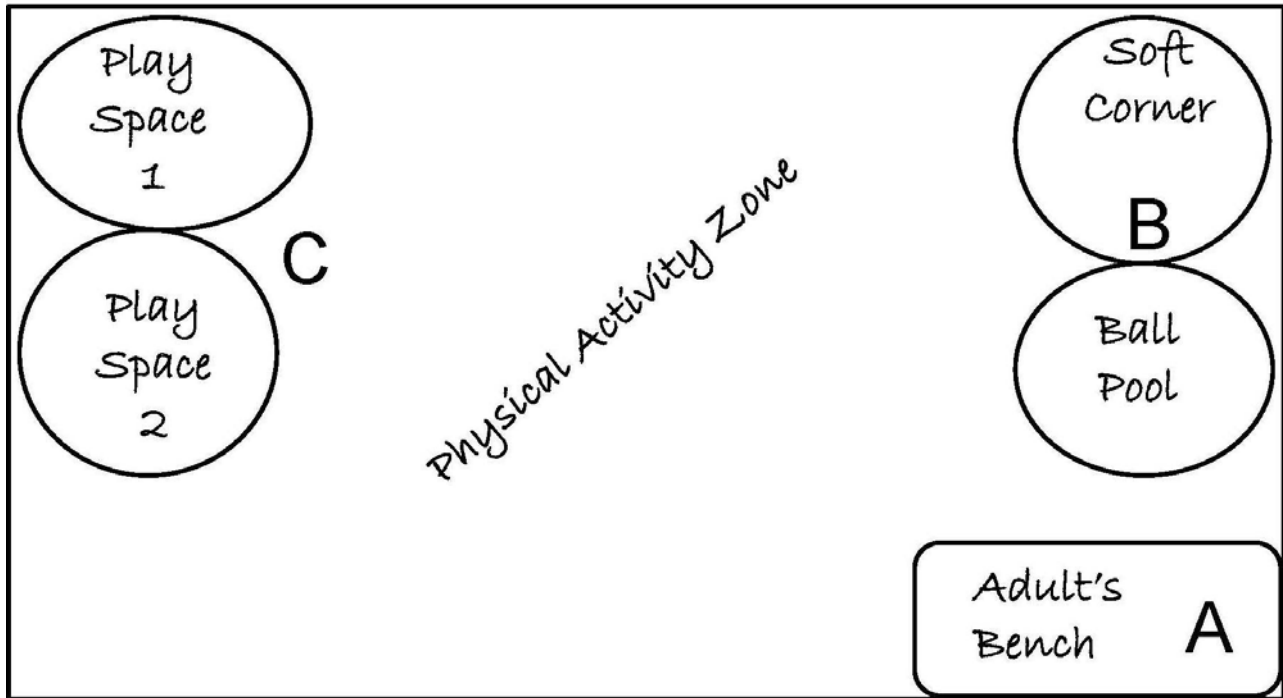
Table 1. Coding System: categories and description (Study 1)

Type of activity

    Physical activity (walking, running, jumping, climbing, rolling over)

    Structured play (playing with objects, manipulating and / or observing them)

    Inactive (sitting, standing still, wandering about aimlessly, holding an object in hand without
        looking at it)

    Social activity (interacting with someone else)

Type of interaction

    Alone

    Observing another person (an adult or a child)

    Positive interaction (hugging, kissing, talking, smiling, imitating, exchanging objects, calling,
        touching)

    Negative interaction (hitting, biting, quarrelling, bumping into)

Table 2. Percentage Use of Space by Children in *Free* and *Corners* Conditions (Study 1)

	Free (N=368)	**Corners** (N=396)
Space occupied		
Soft corner	10%	14%
Physical activity zone*	**48%**	**37%**
Adults' bench	16%	12%
Ball pool*	**11%**	**17%**
Play space 1*	**3%**	**11%**
Play space 2	3%	2%

N= total number of 10-second observation intervals

(*) Significantly different, p <.05 (Chi-square, Bonferroni correction for paired comparisons)

Table 3. Percentage Breakdown of Types of Activity in *Play Space 1* and *Ball Pool* (Study 1)

	Play Space 1		Ball Pool	
	Free (N=12)	*Corners* (N=44)	*Free* (N=40)	*Corners* (N=66)
Type of activity				
Physical activity*	**25%**	**2%**	**40%**	**21%**
Structured play	25%	39%	13%	27%
Inactivity	33%	32%	27%	37%
Social activity	17%	27%	20%	15%
Total	100%	100%	100%	100%

N= total number of 10-second observation intervals

(*) Significantly different, p <.05, (Chi-square, Bonferroni correction for paired comparisons)

Table 4. Percentage Breakdown of Types of Interaction in *Soft Corner* and *Play Space 2* (Study 1)

	Soft Corner		Play Space 2	
	Free (N=38)	*Corners* (N=57)	*Free* (N=10)	*Corners* (N=6)
Type of interaction				
Alone	63%	43%	60%	33%
Observing another person	8%	10%	30%	0%
Positive interaction*	**18%**	**43%**	**10%**	**67%**
Negative interaction	11%	4%	0%	0%
Total	100%	100%	100%	100%

N= total number of 10-second observation intervals

(*) Significantly different, p <.05, (Chi-square, Bonferroni correction for pair comparison)

Table 5. Coding system: categories and description (Study 2)

Type of activity

    Proposed activity (the child carries out the activity proposed by the caretaker)

    Other activity (the child carries out another activity)

    Focused on peers going home (the child stays near the door, looks at it, looks at the
        intercom, refers to other children's parents coming to take them home,
        alternating his gaze between his own activities and the door/intercom)

    Focused on the caretaker (the child seeks the caretaker's attention)

    Focused on another child (the child interacts with another child)

    Wandering (the child wanders around the room or stands still and does nothing,
        looks around, looks at what is happening in the room, looks at what others
        are doing but is not involved in any of the activities)

    Forbidden activity (the child carries out an activity that is not allowed by the
    caretaker)

    Focused on camera (the child looks at the camera or at the observer)

Type of interaction

    Alone

    Positive interaction (hugging, kissing, talking, smiling, imitating, exchanging objects,
        calling, touching) with

        - another child/other children
        - caretaker
        - caretaker and child/children
        - another adult

    Negative interaction with another child (hitting, biting, quarrelling, snatching objects
        from another child)

    Observing (the child carefully observes another person)

        - children
        - caretaker
        - another adult
        - children and caretaker

    Accidental collision with another child (the child accidentally bumps into a peer)

Table 6. Effect of Planned Changes on the Afternoon Session (Study 2)

	Before intervention (N=1380)	**After intervention (N=1110)**
*Number of children per group *		
Fewer than 10 children (small)	41%	**81%**
Over 10 children (medium)	**59%**	19%
Total	100%	100%
*Type of activity **		
Free	**78%**	49%
Guided	22%	**51%**
Total	100%	100%

N= total number of 10-second observation intervals

(*)   Significantly different (Chi-square = 402.478 p < .01)

(**)   Significantly different (Chi-square = 237.306, p < .01).

Table 7. Children's activities before and after the intervention (Study 2)

	Before intervention (N=1316)	**After intervention** (N=1082)
Children's activities		
Activity proposed by caretaker*	36%	**73%**
Other activity*	**4%**	1%
Focused on peers going home*	**3%**	1%
Focused on the caretaker	9%	6%
Focused on another child	4%	3%
Wandering about aimlessly*	**41%**	14%
Forbidden activity	1%	1%
Focused on camera	2%	1%
Total	100%	100%

N= total number of 10-second observation intervals

(*) Significantly different, p <.05, (Chi-square, Bonferroni correction for paired comparisons)

Table 8.

Interaction With Other Children and Adults Before and After the Intervention (Study 2)

	Before intervention (N= 1241)	**After intervention** (N=1063)
Child interaction		
Alone	41%	38%
Positive interaction with another child	11%	11%
Negative interaction with another child*	**6%**	2%
Positive interaction with caretaker	20%	21%
Positive interaction with caretaker and child*	6%	**12%**
Positive interaction with another adult	1%	1%
Observing children	3%	4%
Observing caretaker*	**6%**	3%
Observing another adult	2%	1%
Observing children and caretaker*	3%	**7%**
Accidental collision with another child	1%	0%
Total	100%	100%

N= total number of 10-second observation intervals

(*) Significantly different, p <.05, (Chi-square, Bonferroni correction for paired comparisons)

Table 9. Caretakers' and Coordinator's (N = 12) Answers to Final Questionnaire about the Training Process

	Perc. *
Useful Aspects	
Training in observational method	67
Exchange of views with colleagues	58
Use of a tool that is fine-tuned to the specific context and "personalized"	42
Improvements in lay-out and organization and increase in wellbeing	42
Opportunity to increase knowledge of individual children	25
Self-criticism process	17
Opportunity to obtain feedback in the form of objective data	8
Critical Aspects	
Initial difficulty in accepting change	42
Organizational difficulties (combining meetings with daily activities, subgroup meetings, too many meetings)	25
Difficulty in merging the ideas of different people	8
Danger of personal interpretation of data	8
Initial apprehensiveness regarding the presence of the camera	8
Innovative Aspects	
Use of video-recording	42
Use of a tool that is fine-tuned to the specific context and "personalized"	25
Data analysis	8
Objectivity of observations	8
Comparison of situations "before-after intervention"	8
Availability of expert supervision	8
Opportunity to attend to the behavior of each individual child	8
Potential for Future Use	
Yes, to explore other aspects of everyday life in the day care setting	67
Yes, to identify solutions for critical situations	25
Yes, but with expert supervision	17

*The sum of the percentage values for each aspect is greater than 100%, because practitioners were allowed to give more than one answer to each question.