# Serious Sociological Games in the ELFE Cohort Study: Using Children's Play to Gain Perspective on their Visions of the World

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**Résumé**

**Des *serious games* sociologiques dans la cohorte d'enfants ELFE : faire jouer les enfants pour accéder à leurs visions du monde.** De juin à décembre 2017, un dispositif de questionnaires à caractère ludique destinés aux enfants a été implémenté dans la cohorte ELFE, qui suit depuis leur naissance plus de 18.000 enfants nés en 2011. D'orientation sociologique, ces questionnaires avaient pour objectif de recueillir quelques-unes des préférences des jeunes enfants (5-6 ans) dans leur vie quotidienne ainsi que des indicateurs de leur sens moral et social. Mais ce dispositif de collecte ne disposait ni d'expérience de référence, ni de technologie totalement adéquate. Cet article revient sur les questionnements et problèmes méthodologiques qui se sont posés tout au long du processus d'élaboration puis de passation des trois questionnaires ludiques en ligne. Il analyse en particulier la manière dont les représentations sociales de l'enfance et de l'enquête auprès des enfants ont pu intervenir dans les échanges entre sociologues et épidémiologistes ou entre chercheurs et parents.

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**Abstract**
Between June and December 2017, a protocol involving questionnaires designed to be enjoyable for children was implemented as part of the ELFE cohort study. This national study has followed 18,000 children since their birth in 2011. These sociological questionnaire/games aimed to collect information on the everyday preferences of young children (then aged 5-6 years old) and indicators of their moral and social sense. But this collection method had neither pre-existing experiments it could draw on, nor technology that had been fully perfected. This article revisits the methodological questions and issues that were raised over the process of developing and then administering these online questionnaires. In particular it looks at the way that social representations of childhood and research with children were raised in exchanges between sociologists and epidemiologists, or between researchers and parents.

**Mots clés**
Questionnaire-jeu en ligne, Cohorte d'enfants, Socialisation, Internet, Représentations

**Keywords**
Online questionnaire/games, Cohort of children, Socialisation, Internet, Representations

**Matériel supplémentaire**
La version française de cet article est disponible sur le site internet du BMS. Elle est téléchargeable en tant que "matériel supplémentaire" joint à l'article.

**Supplemental material**
The French version of this article is available on the *BMS* website. It can be downloaded as Supplementary Material attached to the online version of this article.

## Introduction

The project to conduct an online survey for the children involved in the ELFE study (*Etude Longitudinale Française depuis l'Enfance*) was launched in November 2010. This national study, originally designed to cover 20,000 children was programmed to begin the following April (Charles et al., 2011). But its pilot study, in which the protocols were tested with 300 families began back in 2007. The children involved had just turned three and many sociologists participating in the project, who were interested in questions relating to childhood socialisation, were looking for an opportunity to question them directly. The previous stages of the study had involved parents responding to health questions during pregnancy and after birth, followed by questions about educational practices, and the activities and behaviour of their child at two months, one year, two years, and then three years old. However, there was no provision for collecting information directly from the point of view of the child. At age 3, the children were questioned directly, but this was entirely dedicated to measuring their cognitive development and there was no provision for collecting material in response to the sociologists' concerns.

The possibility of a year without data collection was considered by the team coordinating the project, and it appeared useful for its members to maintain the connection with the parents, and also with the children themselves, in one way or another, beyond the regular information letters, holiday wishes, and small birthday presents sent to participants. The option of having an online space where children could play games on the project's website was discussed. It presented the possibility of attempting to articulate sociological expectations with the goal of communicating with the children.

The perspective of online data collection in a form that was entertaining for the children was firstly discussed within the "Socialisation-Education" research group, which is one of the ten thematic research groups within the ELFE projects, and which is specific in that it is primarily made up of sociologists. The use of games, which may coincide with the intentions of the coordinating team, also appeared to be a protocol adapted to children's tastes and a technique that might facilitate spontaneous responses from a quasi-projective approach, close to the way psychologists use children's drawings (Cordeau, 1949; Picard and Baldy, 2012). In January 2011, and then at several stages over the following year, a working group of around 10 researchers came together to develop more detailed propositions.[1] Considerations primarily focused on the nature and relevance of information that could be collected from children aged 4 or 5 through an online methodology, as well as the need to create a protocol for collection that was as close as possible to the games that might already exist online, whilst also being fully transparent for families as to the scientific goals of the operation. Three questionnaires designed to be entertaining for children were developed by the team and sent to the ELFE coordinators (see part 1, below). But numerous questions were raised to do with technological, scientific, and budgetary concerns, and the implementation of these three questionnaires were spread out over several years. These questions are at the heart of this article.

After this long development process, the project organisers having meanwhile succeeded in allocating a budget to have the protocol developed by a graphic designer, sound engineer, and an information technology company, the three questionnaire/games were finally sent out to the children in the national cohort between June and December 2017[2], when they were around 6 years old (between 5 years and 9 months, and 6 years and 5 months, depending on the survey round and the point at which the questionnaires were completed). At the time, most of these children were enrolled at school, either during the final year of nursery school or the first year of primary school. Some 4528 children began the questionnaires, and 4208 completed all three of them, which corresponds to 26.2% of the survey population (and 31.5% of the respondents of the survey round at age 2). This participation rate is relatively low, but it is comparable to that observed in other surveys that are not central to the cohort structure, and which were not administered by telephone or face-to-face. In itself, the sample size allows robust investigations of the population of six-year-old children.[3]

This article revisits the methodological questions and problems that were raised over the course of the process of elaborating and then administering the three questionnaires online. The first part presents the protocol of the study, and the next three parts explore the major methodological challenges linked to the age of respondents, in light of the inherent difficulties involved in collaboration between the researchers, graphic

designers, and online game designers involved in the study. The second part brings us to the central question: can we trust children ('s answers)? It explores this by revisiting a debate that arose within the ELFE cohort research team around the reliability of children's answers. The third section asks whether everything can be discussed with children (and if so how). It looks at the question of the subjects on which it is considered legitimate to question children or not, and the devices required for doing so. It looks at the resistance and debate that emerged particularly on the questions related to professional hierarchies developed in the third questionnaire/game. Finally, the final section explores the benefit and nature of the data collected in an entertaining context, particularly looking at the "animal game" protocol. What kind of data are we collecting when we ask the child to identify with a hero, in this instance an animal, and to make choices within the context of an imaginary story? Does the technological/entertaining aspect of the questionnaires used really provide a vision of children's perceptions of the social world, or does it produce a kind of artefact that in fact obscures them?

Throughout the article, we will attempt to show, through a concrete perspective of what happens behind the scenes of a large-scale cohort study, that the methodological precautions required for any sociological research (Bourdieu, Chamboredon and Passeron, 1968) are amplified here by the age of the respondents. However, although our methodological and theoretical position consists in adapting the conditions of data collection to the specificities of children as respondents, we also show that a certain number of social representations of childhood can work as barriers to such a study, conveying beliefs that are not confirmed by the reality of children's practices and opinions.

## An Atypical Protocol for Data Collection in a Cohort of Children

For the group of sociologists and social psychologists who designed the questionnaire/game, the goal was to obtain a tool that allowed them to collect indicators on how children in nursery school perceive their everyday life, both in the family environment and at school, their relationship with other children and the adult world, the ways in which they appropriate class and gender relationships, as well as issues to do with redistributive justice (Richardot, 2014). Given the various dimensions that were to be explored, from the outset the plan was to develop a tool that would have the child moves through very different spheres and types of questions.

For example, the first questionnaire/game (entitled "Activities" – see Figure 1) was similar to the Sims,[4] and primarily focused on children's preferences in their everyday life, at home and at school. Following the model of the Sim's game and with a view to encouraging the child to project themselves in situations proposed to them, the protocol involved the child creating an avatar, and thus selecting a desired physical appearance, including skin colour, hair colour, and clothes.[5] This avatar was then projected into a series of situations in which the child had to make choices over the course of a school day, beginning with morning activities (staying in bed, playing, going to school), preferred classroom activities (reading, playing, physical activity), the children they wanted to play with at playtime (alone or in a group, boys or girls), what they liked or disliked at
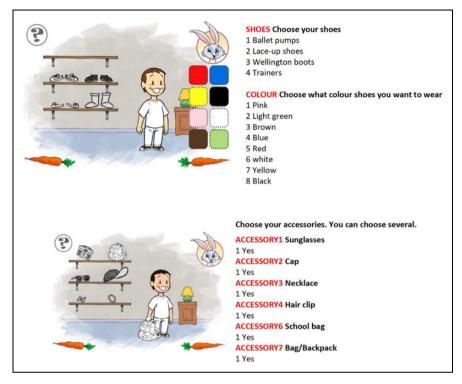
**Figure 1.** Screenshots from the First Questionnaire/Game

NB: The child can only see the left-hand side of the image. On the right the items in bold are presented orally ("Choose your shoes"); the items in capital letters are the variables; those in sentence caps are the categories of the variables.

school (teacher, work, friends, canteen), the toys and activities they preferred at home (dolls, cars, dress ups, board games, television), who they wanted to eat dinner with (brothers and sisters, parents), and what they wanted before bedtime (story, cuddles etc.). We were thus able to collect data relating to the child's attitudes toward school and their peers, as well as markers of their social identity.

The second questionnaire/game ("Animals" – see Figure 2) mobilized the imaginary associated with animals, similar to the bestiary used by Zazzo (1955) but in a more scripted way, inspired by *The Animals of Farthing Wood* and with a musical soundtrack (and with the passage between many of these screens being fully automated). This was the opportunity to collect information about the children's (dis)likes and representations of five particular animals (bird, bear, dog, lion, cat), through two questions: "If you were an animal which one would you be?", and "Which animal would you not like to be at all?"

The choice of these five animals was based on a consultation of a broad sample of children's books, both picture books and non-fiction, with a view to identifying animals that are often represented for children and which appear to have characteristics that
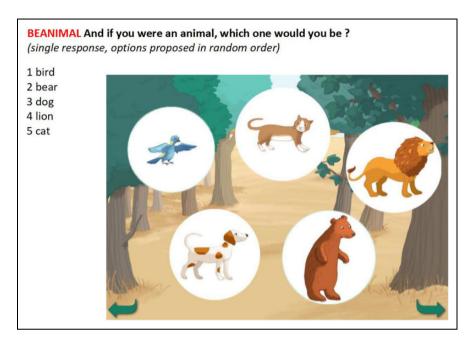
**Figure 2.** Screenshot from the Second Questionnaire/Game

are both stable and very different from each other. The wolf for example, which is overrepresented in French children's literature, was not included because of the particularly contrasting images it now evokes, from the traditional wild devourer-of-children, to the misunderstood vegetarian dreamer. But although this choice was rational it did not guarantee that the children all saw the animals in the same way. In order to control for the physical, aesthetic, or moral characteristics that the child either chose or rejected in a particular animal, they were first asked a series of questions in which they had to associate these five animals with different qualities: nice/nasty, beautiful/ugly, strong/weak, intelligent/stupid. At the end of the questionnaire, still with the objective of exploring the moral dispositions of child, respondents were asked to choose a particular "object" to resolve a conflict over stolen food: a gun, a magic wand, a document from the animal law, or coins (see Figure 3). These objects represented for possible ways of resolving conflict, by force, by magic, by the law, or by money.

Finally, a third questionnaire/game, related to the world of professions and designed along the lines of ranking games, followed on from recent sociological work on the social sense of adults (Deauvieau et alii, 2014) and children (Zarca, 1999; Lignier and Pagis, 2017), applying them to an earlier age group. After two open-ended questions on the job that they would like to do most and least when they are "older", the child had to rank six jobs in preferential order (see Figure 4) and then establish three "marriages" between people of different professions (see Figure 5). Several things were at stake in the choice of the professions included in these tasks: the jobs had to be familiar to the vast majority of children; there had to be an equal number of upper-class, middle-class, and

1 The magic wand, to put a spell on the thief
2 The gun, to scare the thief
3 The money to buy the food back
4 The paper from the animals' law, to tell the thief that he has no right to steal other animals' things

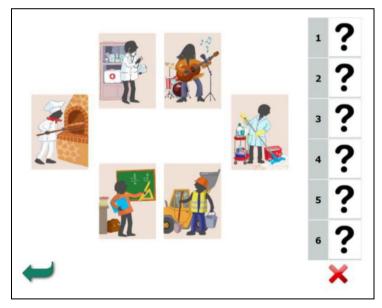**Figure 3.** Screenshot from the Second Questionnaire/Game



**Figure 4.** Screenshot Corresponding to the "Job Ranking" Game (Third Questionnaire/Game)

NB: The oral prompt began like this: "You can see six jobs on the screen. In this game you have to rank the jobs from what you like most to what you like least" and continued by presenting the six job-cards arranged at random around the screen: "there is a worker, a schoolteacher, a singer, a baker, a cleaner, and a doctor."
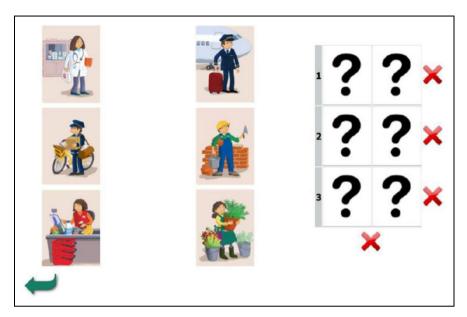
**Figure 5.** Screenshot from the "Marriage Game" (Third Questionnaire/Game)

Nb: The oral prompt began like this: "Now you can play the 3 marriages game. The six people on the screen are getting married, choose their partners", followed by a presentation of the six people-cards randomly organized on the screen: "This man is a builder, he builds houses", "This man is a pilot. He flies planes", "This man is a postman. He brings letters", "This woman is a florist. She sells flowers," "This woman is a doctor", "This woman is a checkout assistant."

working class jobs, following the official categorizations of the National Statistics Institute (INSEE); and finally, we had to take into account the question of "gendered jobs", preferring either gender neutral jobs or a mix of jobs perceived as masculine or feminine. The two solutions were combined. For the ranking game we chose six jobs illustrated by neutral pictures associated with gender neutral explanations: "building site worker", "school teacher", "dancer", "baker", "cleaner", "doctor".[6]

The "marriage" game was driven by the concern that the children recognize selection of jobs, this time clearly characterized as men and women (male airline pilot, male builder, male postal worker, female shop assistant, female florist, female doctor – see Figure 5).

This questionnaire/game then moved on to the environment of a toy factory and the child was asked whether he or she preferred working in the "team" of those who "made" the toys, or those who "gave the orders". Then they were invited to place four jobs in an urban space divided into "high-rise", "big gardens", "little houses", and "city centre" and to choose the area he or she would like to live in themselves.

Moreover, with the objective of providing transversal indicators on the moral dispositions of the children, a hypothetical situation was included in each of the questionnaires on the notion of distributive justice. In the game based in everyday life, the child was asked about how lollies should be distributed, whether as a reward for schoolwork or

on the basis of equality. In the animal game the children were asked how they would respond to a poor animal who had stolen food, with responses ranging from punishment to the gift of food. In the game about jobs, the child was asked how wages should be distributed between workers and managers, favourable to the former, to the latter, or equally distributed.

This protocol was then adapted to the regulatory requirements for large-scale surveys and the technical requirements for longitudinal research. Parents were contacted with a personalised letter advising them of the protocol and presenting it, in which the address of the web platform on which the child would be able to respond to the questionnaire/ game was given, along with a code that would allow them to connect and enable the personalised collection of data. It was also necessary to outline how the shift from one screen to another would take place, and how the information would be validated. Once children had moved beyond the opening page, they accessed a screen in which the whole of the protocol was briefly presented by a drawing of a rabbit, and an audio message with the presentation phrase and the invitation to move onto the next screen. After this, the protocol continued in the same way, with the progression from one screen to the next (generally at the child's initiative) triggering audio prompts for the new screen. The children could also return to previous screens and change their answers. All questions were presented with illustrated bubbles that corresponded to the different response categories for the question that was given orally. Moving the mouse over one of these illustrated bubbles triggered the audio corresponding to the picture; and to answer, the child had to click on their chosen answer (or answers, in the case of multiple-choice questions). Most often the screens were made up of an illustrated background on which the illustrated bubbles of the response categories were distributed.

To avoid any erratic responses, the three games had to be completed in the order intended – from the sphere closest to the child's experience ("activities"), to that most removed ("jobs"), with the imaginary sphere ("animals") in between. The games moved automatically from one to the other. At the end of each questionnaire/game, the child confirmed their answers and could print out a page from one of the previous screens, or some of their answers, as a souvenir. If they disconnected during the game, and then reconnected, they returned to their place in the questionnaire, with their previous answers recorded but still modifiable. If they did not reconnect, these previous answers were considered validated automatically.

Although this is how the questionnaire/games were ultimately administered, this presentation obscures the interactions between the research team, the cohort coordinators, and the families. As we have mentioned, the construction of this methodology was the product of a long scientific and technical process, punctuated by debates and adjustments, and particularly questions around the reliability of the answers collected.

## Can We Trust Children ('s Answers)?

The question of how reliable children's answers are has long been debated in psychology and in political science, particularly in quantitative research, where statistical reliability is measured by the stability of responses in reiterated data collection. From as early as 1973, the Canadian political scientist Pauline Vaillancourt showed that the instability of

children's responses was potentially high between age 9 and age 15 (Vaillancourt, 1973). Having surveyed the same group of 1,000 children three times over the course of the year 1968–1969, she observed, for example, that a little less than three quarters of them declared the same religious affiliation in all three surveys, and half declared the same partisan preference. The author concluded therefore that children had only embryonic attitudes in this area of political and moral socialisation. In 1980, the British psychologists Martin Hughes and Robert Grieve compared the responses of five and seven-year-old children to deliberately ambiguous questions, demonstrating that the youngest responded most often, and expressed less uncertainty, and used external elements to find systematic answers to the questions asked (Hughes and Grieve,1980). This research encourages us to remain vigilant about the cognitive abilities of children whilst also constituting an invitation to develop methodologically specific instruments with which to capture children's representations of the social world.

More recently, in France, the sociologists Pierre Mercklé and Sylvie Octobre studying adolescents' practices this time, observed that the children's responses varied significantly, particularly when synchronic and retrospective questions were compared (Mercklé and Octobre, 2015). But they also demonstrated that these changes were not the result of simple "statistic noise", nor the young respondents' tendency to be inconsistent. Rather they should be analysed in the context of their production, and, particularly in the case of longitudinal studies, as the expression of the constantly renewed interconnection between dispositions resulting from children's social trajectories and the spaces of socialisation in which they are situated at different ages (Mercklé and Octobre, 2015: 23). It is also important to not assume stability in the responses, even though their variability is not considered a sign of a defective questionnaire. More broadly, epistemology in the social sciences encourages us to abandon the search for unchanging and objectivatable realities – which would have the social sciences move closer to life sciences – in order to focus more on the principles that organise differentiation in perspectives and the social and historical variability in these principles (Passeron, 1991). Although it is still possible to question the reliability of these answers from this perspective, it is in a more general sense that concerns both adults and children and which incorporates the questions of legitimacy effects and social desirability, much like in the considerations around surveys of sexuality, for example (Bozon, 2009). It is above all the mode of presenting the study, formulating the questions (in a way that is as close as possible to the respondent's own ways of thinking and expressing themselves) and collecting the responses that are important. Although the design of the data collection tools must aim for responses that are as spontaneous as possible, it is above all the analysis of this data that enables us to validate (or invalidate) the hypotheses tested by the study.

From the very early stages of discussion among the sociologists involved in the ELFE study, the question of how substantial answers from five-year-olds could be, was a subject of some debate. Asking questions about the extracurricular activities they did in a week, for example, raised the problem of their ability to situate themselves in time. In order that the answers would come as much as possible from the children themselves, rather than from their parents, and given that parents would probably assist their children in beginning, or even completing the questionnaire/game, it was also important that the

questionnaire did not appear too much like a psychological test, nor like a simple description of the children's daily activities. It was impossible to guarantee that parents would not influence the children's responses, but we tried to limit this influence as much as possible. It was therefore decided that questions seeking to obtain an objective description of practices would not be included, as they presented the greatest risk of cognitive and psychosocial bias and would in any event be asked of the parents directly. The game would therefore focus on questions about representations, preferences, and the child's perspectives, and we prioritised technological methods that would allow the children to understand the questions without adult intervention, with audio prompts systematically corresponding to the images, and drawing on simple digital functions, and making sure that the whole of the graphic and audio environment was entertaining and stimulating for the child.

The first questionnaire/game ("activities", see above) was developed and sent to families in the pilot cohort during spring of 2013. Aside from a few technical difficulties (particularly issues to do with compatibility between web browsers and the platform used), most of the children were able to answer the questionnaire/game (107 children participated in study). In March 2014, after an initial small-scale analysis of the data collected had been conducted within the ELFE coordination team, there was a series of exchanges between them and the sociologists in the socialisation subgroup as to the benefit of including the questionnaire/game in the national cohort. The question of the statistical reliability of children's responses was brought to the fore once again. Several members of the project's leadership team proposed that the sociologists conduct a "replicability test" so that the questionnaire could be recognised as robust enough for publications at the international level. This request reveals the epistemological and methodological distance that exists between the control procedures used in epidemiology (see for example: Nickerson, 1997; Papoz, 2001), which are also promoted and currently subject to heated debate in experimental psychology (Jarrett, 2015), and the procedures used by sociologists. The former disciplines are firmly rooted in the epistemology of the life sciences and were initially concerned about obtaining "true" answers, which for them equates to answers that are stable and fall within normal distributions if possible. For them, implementing replicability tests fulfilled this requirement, even if it meant conducting validation tests on small samples without controlling for social diversity within them. The sociologists however, drawing on the epistemology of the social sciences, remained suspicious about the possible artifice of a purely experimental reasoning on social facts, and hoped to primarily rely on observational data at a sufficiently broad level. They noted that the correlations observed in the pilot study validated their hypotheses; for example, the variations were those expected in terms of the children's gendered preferences for toys or clothes. They also observed that girls more often proposed an equal distribution of lollies than boys, in the context of the hypothetical scenario where the sweets were assimilated to rewards for schoolwork. The sociologists would have preferred to develop a qualitative study of the reception of these questionnaires to understand the context of the children's perceptions of them and potentially modify the data collection tools.

But the proposal of a replicability test was insisted upon given the age of the respondents. The concern was that answers would not be significant due to possible instability,

associated with the supposedly low levels of consistency in their dispositions. The sociologists emphasised their own studies on the emergence of social and moral dispositions of children in the early years, and they encouraged making a distinction between a possible "volatility" of opinions and the stability of oppositions according to key social determinants, as is the case in electoral sociology (Lehingue, 1997). Their arguments remained ineffectual, given that the use of control procedures like replicability tests seemed self-evident in the context of a study like ELFE. A compromise was finally agreed upon, with a simultaneous launch of a replicability test for the first questionnaire/game and the development of the second and third games.

A year later, the replicability test was indeed launched, by recruiting families from among the entourage of the researchers, evidently situated in a particular social sphere. 46 children, aged on average four years and nine months completed the first game, and then two months later, 23 of them completed it a second time when asked to do so again. (Pilorin, 2015) The only sociodemographic variables collected were the sex of the children and their ages in six months increments.[7] The aggregate responses were stable between rounds, but individual variations were observed. Cohen's kappa[8] was used to quantify the degree of agreement from one round to the next, between the responses of children to different questions. It became clear that single choice questions had a kappa coefficient of between 0 and 1, which shows more or less reliability between responses, while the multiple-choice questions sometimes had a negative coefficient which suggests changing responses. The maximum coefficient was obtained on the question of hair type, the minimum on the colour of shoes. This suggests that the questions relating to the child's identity were treated more seriously and responses were not chosen at random. Therefore, although the demonstration of replicability was not guaranteed for all questions,[9] the first questionnaire/game overall past the test. The five and six-year-old respondents did not simply answer the first thing that came into their heads, but seemed concerned with doing well. This shows a certain number of likes and dislikes that are already established at this young age. The young respondents thus proved themselves worthy of the researchers' trust in response to the question of this first section.

The question of the reliability of five and six-year-old children's answers, and thus the benefit of collecting data directly from young children, was not the only subject of debate among the researchers however. Another point of contention raised in these preparatory discussions, which was also reiterated by parents when the study was conducted, concerns the content of the questionnaire/games we were developing, as we will see.

## Can We Talk About Everything with Children? And If So, How?

The third part of this article looks at the debates between colleagues and the reactions of certain parents to the questionnaire/games, as well as the content of the questions. In so doing, it shows that these debates reveal implicit, distinct, and socially situated visions of what childhood is. We will begin by looking at the methodological implication of the combination of "childhood" and "fun", before looking at the concerns about the subjects that might be considered inappropriate to discuss with young children – which some parents sought to protect them from – or the trap of adult-centrism that was of concern for certain colleagues.

"Hi there, my name is Elfi. I'll show you some little games where you can choose the things or characters you like the most. You will start by choosing the character who looks most like you! Click on the carrot to begin!" (verbal instructions)

**Figure 6.** Elfi presents itself

To do this, we will look at the various materials relating to the "questionnaire/games" used by the ELFE team in communicating with families, as well as the 21 emails that parents sent to the research team about the protocol (out of more than 200 emails mostly related to technical questions about how to complete the questionnaire).

## No Childhood Without Play?

Why did we choose an entertaining approach to collecting children's data? The me-thodological choice results from considerations on two distinct levels. Questioning children in a fun way was primarily a way to make our questions entertaining and avoid them being considered like a "test" or as "schoolwork". This would have reinforced the social desirability bias, which consists in the likelihood of giving a socially desirable response rather than a response that actually corresponds to one's practices; this bias is not specific to children but is accentuated with young respondents (Cahalan, 1968; Gove and Geerken, 1977). Adopting an entertaining approach was also strategic in that it helped ensure the questionnaire was acceptable to parents.

The instructions given verbally on the opening screen when the child connected to the platform to participate for the first time reflects these two concerns (see Figure 6).

The visual environment, the rabbit and its name (Elfi), the idea of "little games", or the carrot to change screens, all contributed to constructing a "childlike world" which seemed to us to be both appropriate and strategic in adapting the questionnaire to the characteristics of the population being investigated. It was "appropriate" given that we were aware of the sociologically established need to question respondents on a world that is familiar to them; and children spend most of their free time playing (Winnicott, 1975; Brougère, 1995; Gaussot and Geay, 1997; Geay, 1999). It was also "strategic" because it aimed to maximise the response rate while appeasing certain parents who might be unhappy with their children responding to questionnaires that could be considered unsuitable for children. The issue of attrition is central in any cohort study, and it is important to mention that these games took place within the calendar of the ELFE cohort study, coming at a "lull" in the other regular questionnaires. The fact that they were considered a way of maintaining contact with the families, and thus encouraging a kind

of fidelity among respondents, also contributed to their being accepted within the general economy of the cohort.

The information letter that was sent to all the cohort parents to present the study beforehand reflects the terminological hesitations as to how to describe this unusual kind of questionnaire – alternately described as "online games" or "questionnaire/games". One phrase from the letter particularly reveals the hybrid nature of the final methodological device (a questionnaire but also a game), as well as a certain injunction to use play when interviewing children: "The Elfe study is centred on childhood, it is therefore natural to give children a voice through a method that is appropriate for their age and generation: computer games."[10]

The enthusiastic feedback about these three "questionnaire/games" in the pilot study and in the entourage of the researchers, allows us to affirm that in most cases the children did actually have fun answering. Also, a survey conducted by the national cohort coordinating team with 72 families who volunteered to be "Ambassador Parents", emphasised their satisfaction with this activity which was considered "attractive and entertaining, appreciated by children who were happy to have access to the computer and in certain families children asked to play other games!"[11] The children's pleasure in playing with our questionnaire also appeared in the 20 or so emails received from parents about it, which emphasised that the children "adored the games" or that they "were unhappy they could not play again."

This makes the few critical emails received all the more interesting. In them we can implicitly see the importance of play in the extra-curricular activities targeted at children, although this "play" is socially differentiated.

> Hello,
>
> Our son is not very familiar with the computer because we do not want him to have access to it. As a result, he is not very good with the mouse and had a lot of trouble clicking on the images.
>
> So the first part of the game took him twenty minutes.
>
> He quickly became discouraged and lost motivation because *it was not very much fun!* [12]
>
> I realise that I could have clicked for him, but XX is very independent and he wanted to do it.
>
> In summary: *too complex, too long, and not fun!*
>
> I am very sorry to not be continuing, because it is important to me to honour the commitments that I make, but I do not want it to become *a burden!*
>
> Regards . . . (email n°5, 08/09/2017)

This email confirms that it would have been unthinkable, for a set number of parents, for their child to respond to a "genuine" questionnaire.[13] Although they were designed and constructed to be "fun", our "games" were not considered as such by this mother, which reflects the socially situated nature and shifting form of what different people consider entertaining. Here, this mother hinted that the fact that the game was computer-

based was, according to her, the reason "it was not very much fun!" In this she echoes the comments of several parents who wrote to the ELFE team explicitly refusing that their child participate in "screen-based" activities and games, like this parent who wrote:

> Hello,
>
> My son will not be participating in this game, because *I refuse to entertain him through a video game.*" (email n° 17, 26/12/2017)

In other words, for these parents, play is important for children but not merely any kind of play. This argument was developed in more detail by another mother, who wrote:

> Hello,
>
> As a parent and as a professional (speech therapist) I am extremely interested in your study. Through my professional practised, *I am highly aware of the dangerous effects of over-exposure to screens on the cognitive and emotional development of children.* I work specifically with families on raising awareness around this problem and I hope that your study will help to spread this message among a wider population.
>
> That is why, *for the development of our children*, for the enrichment of their imagination, their creativity, so that they construct their own thoughts and *learn how to play*, to be bored, to find things to do and so on, we control the use of screens and digital media in our household.
>
> *Suggesting to our son, who is a participant in the study, that he play games on the computer therefore goes completely against the principles that we hold dear.* We therefore do not wish to encourage him to discover *this kind of "pastime" at this point in time.* [ . . . ]
>
> Warm regards (email n°15, 31/01/2017)

In this email we can see the association between computer games and "unacceptable pastimes", but the argument goes further and explicitly expresses a socially situated representation of childhood that needs to be protected from screens, considered dangerous for "development", and considered contrary to "real games". The fact that the author of this message also contributes, through her work, to producing norms of "good practice" for families in terms of education, shows the struggles around the definition of what "play" is.

## Should Children be Protected from the (Harsh) Realities of the Social World?

Having looked at how the questionnaires were administered, as a result of the specificity of the child respondents but also the social definitions of childhood promoted by the ELFE researchers and by parents in the cohort, we now come to the question of the subjects which are seen as more or less legitimate to discuss with children. Parents' reluctance to have other adults talk to their children about politics or religion has been long documented, particularly through the founding studies of Annick Percheron (Percheron, 1974). More specifically, we know that within the family sphere itself,

certain parents (particularly those on the political right) do not talk about politics in front of their children (Muxel, 2001; Lignier and Pagis, 2017), others do not talk about money in front of them.[14] There are various "sensitive" subjects, in the sense that they are potentially conflictual and therefore, according to these social representations of childhood, children should be protected from them. Adults therefore have situations and spaces "reserved for children" in which they adapt their behaviour and comments to children, particularly to protect them from the violence of the social world; but this is more or less the case depending on the social milieu (Ochs and Schiefflin, 1986). During the design of the questionnaire/games, certain colleagues expressed their reticence about the third game dedicated to children's representations of professions, and particularly regarding the question that asked the children to rank the six professions. They were afraid that this would shock parents – and perhaps some of them were shocked themselves – that children were asked to construct a hierarchy of professions (because of the social and symbolic violence behind any kind of ranking: Lignier and Pagis, 2012). Their reservations were also linked to the idea that this was an "adult subject" and that questioning children about something that was not within their symbolic world ran the risk of falling into the trap of imposing the problem question onto the respondents (Bourdieu, 1984), with the risk of discouraging them from answering and/or alarming certain parents.

Although this reticence indeed anticipated certain parental reactions (of a very small minority), they above all reflected the social or disciplinary representations of childhood, which did not necessarily correspond to the reality of children's practices and responses, as we will see. To explore this, let us begin with an email that is by no means representative, but is archetypal:

> It is very fun, and well-constructed. ( . . . ) However, the third activity is very stereotypical, in spite of the interest in the professions. *Do you think that a six-year-old child can already identify with this? LOL*, especially given that XX wants to be a cook! *No joke, for the marriage pairs, the kids are not going to make distinctions between socio-economic groups.* For where they live neither. In fact, it is we who are "shocked" because it is sacrosanct society that differentiates, not just people. *Children do not made a priori judgements*; it is consumer society that discriminates. We had to explain that people live where they can, and that there are big cities where there are only high-rises, and other that are more rural. This was good for discussion, but it is a bit frustrating because *children see the world differently*, and it is as they get older that the "differences are accentuated". He chose their houses with *his child's heart* and not based on social stereotypes. (email n°13, 29/10/2017)

This message is typical of a social representation of children as pure beings ("his child's heart"), with no "a priori judgement", thinking "differently" and who do not use – or even perceive – social difference ("children make no distinction between socio-economic groups"), before being sullied by the discriminations of society (Chombart de Lauwe, 1971). And yet if we look at the three questionnaires as they were filled out by the children in the national cohort, it does not seem that the third game is the subject of any kind of substantial rejection. Indeed, of the 4492 children who completed the first questionnaire, 4278 also finished the second (95%), and 4208 the third (94%). In other words, we "lost" 284 children between game one and game three, which corresponds to

6% of those who started the games and less than 2% of the cohort respondents. More-over, out of the 4208 children who finished three questionnaire/games, 4115 responded to the first two open-ended questions in which they were asked which profession they "would most like to do" when they were older, and which "they would least like to do", which represents more than 97% of respondents. A first analysis of these responses shows that at six years old, children already have clear professional aspirations and projections (whether they realistic or not, that is not the issue here).

As far as their (non-) perceptions of professional hierarchies in the "marriages" question (in which the children were asked to make three "marriages" from the six job cards), the results of the cross tabulations are unequivocal: the most common match is that of the pilot with the doctor; the second most common is the postman with the florist; and the third the builder with the shop assistant. In other words, the three most frequently chosen matches are homogamous and heterosexual, even though all possibilities were available for the children – homosexual marriages, multiple marriages (for example they could have chosen to have the pilot marry twice) – the only exception being marriage with oneself. At age 5 or 6, these children have visibly already developed a "social sense" (Zarca, 1999), hierarchical perceptions of the professional world, and homoga-mous and heterosexual representations of marriage.

We can also cite the email from a parent who complained that we were "transmitting stereotypes" about gender and work:

> Hello. After your online questionnaire/game, I wanted to share some of my observations with you. Concerning the professions firstly, the choice of profession by gender feels a little like the Middle Ages. Women are shop assistance florists etc. It is all a bit cliched really . . .
>
> [ . . . ]
>
> At a time when we are fighting for gender equality, I find all that very retrograde.
>
> Warm regards. (email n°20, 06/01/2018)

Are these "stereotypes" or social realities? The objective of this third game was to question the children on their perceptions of professional realities, and the choice of the three professions fulfilled by men and three by women had to respond to several require-ments (see part 1 above). These professions had to not only be familiar for the children, and socially diversified, but also representative of social reality. The national statistics institute (INSEE) conducts annual studies on employment which are very valuable here concerning the ratio of men to women in each of the socio-economic category. If we look at the two professions cited by this parent, the concatenation of the employment studies between 2008 and 2016[15] shows that 90.5% of checkout assistants were women, and that this rate was 68,2% for artisan-florists, and 73% for flower sellers. What some people describe as "stereotypes" in fact reflects contemporary social realities that children perceive, and that sociology must try and document. But this may be confronting for certain parents in the extent to which these realities do not necessarily correspond to their own representations, or because they criticise our questionnaire/game for reifying social reality instead of challenging it. On this point, and for this specific question, the objective

was to question children about their representations of social homogamy, and our scientific position was to represent social reality and not to propose professions that were less explicitly gendered (although this option was taken for the previous question on job rankings).

The participation rates in the three questionnaire/games along with these first results confirm that at age 5 or 6, children indeed have an early "social sense", which underlines the great benefit of the early collection of information about children's likes and dislikes, which are still taking shape, but which are already socially differentiated as we will see below.

## Conditions for Data Use

Finally, the data collection method must also be considered in light of the nature and value of the information that it allows us to gather. The digital tools and the distance resulting from the entertaining aspect designed to provoke and maintain the children's attention by situating them in a sphere of familiar references can all have effects on the data. Using the example of the second questionnaire/game ("Animals"), this section will show that the scientific relevance of this kind of protocol relies on methodological reflexivity. Contrary to the idea that there may be a "pure" kind of data, we can see that this is necessarily produced through (and by) a collection method and the use of role-play situations, which must be taken into account.

We will begin by setting aside the technical objections according to which children might have participated simply for the pleasure of using the computer, or at least independently of the task itself.

Thus, at the beginning of the questionnaire/game, the child had to indicate the animal that they associate with particular characteristics.[16] For each of the eight characteristics, five species are presented, each bubble containing the drawing of an animal (see Figure 2 above). To be sure that the children made a choice linked to the content of the bubble and not its position on the screen (and therefore did not always click on the same bubble), the animals were distributed randomly on the screen.

If we compare, for example, the choices made on the screen asking children which animal is "the nicest", and then in the following screen the opposite characteristic ("the nastiest"), we can see that there is no correlation between the position of the bubble chosen in the first, and that chosen in the second (see Table 1). In other words, the technical decision to randomly place the five animals in the five bubbles on each screen allowed us to verify that the children's answers were independent of the icon's position on the screen. Therefore, without falling into the rose-coloured opposite view of "digital natives", it was clear that those children who did respond were sufficiently familiar with this type of technology as to provide coherent responses.

This lack of relationship can be seen for each of the eight passages between screens allowing the attribution of different characteristics. Inversely, if we compare the coherence of choices made not according to the position on screen, but because of what it represents, i.e. the animal species (specifically not defining the animal as "nice" in one screen and then "nasty" in the next screen), the connection becomes highly significant (less than 0.0001).

**Table 1.** Choice of Characteristics According to the Answer's Position on the First Screen ("Nice") and Second Screen ("Nasty"). N=4187 / Khi2 Not Significant (0,1666)

| | | Nasty (position of the bubble on the screen) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Position 1 | Position 2 | Position 3 | Position 4 | Position 5 | Total |
| Nice (position of the bubble on the screen) | Position 1 | 21.5% | 21.1% | 19.6% | 16.8% | 19.3% | 19.7% |
| | Position 2 | 18.1% | 19.4% | 19.4% | 22.5% | 21.3% | 20.1% |
| | Position 3 | 22.8% | 21.4% | 23.4% | 19.1% | 20.1% | 21.4% |
| | Position 4 | 18.1% | 18.6% | 20.2% | 19.8% | 20.1% | 19.4% |
| | Position 5 | 19.5% | 19.6% | 17.4% | 21.7% | 19.3% | 19.5% |
| | Total | 19.9% | 20.6% | 19.9% | 19.7% | 19.9% | 100% |

Although the value of the results is not linked to the technical modality of their collection, the fact that the tasks were conducted in a fun and entertaining environment (involving stories, drawings, voices, music etc.) may introduce a certain distance from representations and judgements which must be analysed. The questionnaire/game aims to collect children's moral dispositions and their attitudes towards distributive justice by situating them not in a familiar or realistic context (as was the case in the first questionnaire/game), but in a world of animal characters.

Throughout this process, therefore, it was important to successively introduce the variables that provide information about the signification and coherence of the children's choices in this context. It became possible to correlate the choice of animals not only with the social properties of the children, but also with the types of moral characteristics that were attributed to them.

Observing the children's choice of favourite animals also shows that there are general preferences for certain species, but also variations according to gender (see Table 2).

The cat was the most frequently chosen animal, but it was a particular favourite among girls (chosen by one girl out of two). Inversely, although the lion was a favourite of one out of four children, it was most often chosen by boys (40.5% of them chose it).[17] Birds were more favourable with girls, and dogs seemed equally liked by both sexes. The bear was not popular with either sex, although girls seem to like it even less. This distribution reflects gender preferences that associate domestic animals with female preferences and wild animals with male preferences (Vitores, 2019). Let us look in more detail at the case of the lion to pursue the analysis of the moral characteristics that the children associate with this animal.

A sign that the lion crystallises children's representations most strongly is the fact that, after the bird and equal to the bear, it is the animal that is most frequently cited by the children in response to the series of characteristics proposed.[18] The most frequent characteristics chosen for the lion are very polarized. The lion is perceived overall as "the nastiest" (72%) and "the strongest" (51.9%). These are characteristics of an animal that appears primarily as a threatening predator, at least compared to the other species, and is associated with being strong and "nasty" (understood as aggression towards the outside world), which are characteristics ordinarily considered masculine.

**Table 2.** "If you were an animal which one would you want to be?" Answers by Respondent's Gender (n=4042)

|        | Girls  | Boys   | Total  |
|--------|--------|--------|--------|
| Cat    | 49.5%  | 24.3%  | 36.9%  |
| Dog    | 15.6%  | 14.2%  | 14.9%  |
| Lion   | 10.1%  | 40.5%  | 25.4%  |
| Bird   | 22.4%  | 15.4%  | 18.9%  |
| Bear   | 2.3%   | 5.5%   | 3.9%   |
| Total  | 100%   | 100%   | 100%   |

**Table 3.** The Adjectives Associated With the Lion According to Whether Children Would/not Like to Be One

|                                                  | Nicest | Nastiest | Most beautiful | Ugliest | Strongest | weakest | Cleverest | Stupidest |
|--------------------------------------------------|--------|----------|----------------|---------|-----------|---------|-----------|-----------|
| Children who would "like to be a lion"           | 4.0%   | 70.6%    | 33.0%          | 4.3%    | 62.3%     | 0.4%    | 20.0%     | 5.7%      |
| Children who would "not at all like" to be a lion | 0.2%   | 85.8%    | 4.6%           | 20.5%   | 51.5%     | 0.5%    | 9.8%      | 19.0%     |
| Total respondents                                | 1.3%   | 72.0%    | 15.4%          | 11.2%   | 51.9%     | 0.6%    | 15.0%     | 12.2%     |

But if we compare the sub-population of children who, after finishing the initial phase associating characteristics with animals, then declare that they would like to be a lion (n= 1035), with children who would "not at all" like to be one (n = 1066) (see Table 3), we can observe certain variations that allow us to explore the different forms of these representations more closely (Héran, 1987; Herpin and Verger, 1992). Although, the lion is consistently described as "nasty" and "strong" regardless of the population, it is more associated with nastiness for children who later declare that they would not want to be a lion, and more associated with strength for those who later say they would like to be one. Similarly, children who did not want to be a lion also describe it as "the ugliest" and "stupidest", and the inverse is also true.

Although we cannot rule out the possibility that the image of the lion presented to the children contributed to the traits and their decision about whether they wanted to be one or not, it is above all important to notice that the protocol allowed for the expression of socially constituted likes and dislikes to be expressed. The attraction of the species prototype (Rosch, 1973) and its representation can thus be explored both from the perspective of the characteristics that are more or less associated with it and the social properties of those who express moral preferences here. From this point of view, it is less important to measure the influence of the iconography than it is to note that that does not throw into question the expression of coherent and socially differentiated responses. Indeed, what we seek to understand here are the moral preferences that children will

**Table 4.** Moral Choices According to Gender and Preferred Animal

|  | All girls | Girls who want to be a lion | All boys | Boys who want to be a lion | Total population |
|---|---|---|---|---|---|
| Give all the food to the thief | 0.9% | 2.5% | 1.5% | 2.6% | 1.2% |
| Share the food with the thief | 82.8% | 80.3% | 76.5% | 73.4% | 79.6% |
| Take the food back and leave | 7.6% | 8.9% | 9.6% | 10.6% | 8.7% |
| Take the food back and punish the thief | 8.6% | 8.4% | 12.4% | 13.5% | 10.5% |
| Total | 100% | 100% | 100% | 100% | 100% |
|  | (n=2029) | (n=203) | (n=2019) | (n=823) | (n=4048) |

apply through the hero (who appears on the screen in the form of their preferred animal) at the end of the story, and which we suppose are connected to the social characteristics of the respondents (Bourdieu, 1979; Caveng et alii, 2018). The proof of this is that in the population overall, in other words independent of the animal preferences expressed, the vast majority of children (79.6%) choose to resolve the problem of the thief who steals the food with the hero "sharing the food with the thief". In other words, when it comes to choices in terms of distributive justice, even though the hero is in the shape of an animal, it is above all the child's preferences that are expressed. There are variations in this however. Children who chose the dog are more numerous in suggesting that the hero shares the food with the thief (83.5%) and those who prefer the lion lean in the opposite direction (along with those who chose the bear, who are far fewer) and share the least (74.7%). Is this a result of the animal chosen, or is it the result of the social and moral properties of the group of children who chose a particular animal? Rather than looking for the specific effects of a particular variable, such as the animal, or social characteristics like gender (following an "all things considered equal" model), it seems more interesting to explore their interactions (see Table 4).

As we can see in the table above where gender and the choice of identifying with the lion are cross tabulated on the question of distributive justice, gender remains the primary explanatory factor with the girls opting much more than boys to share their food. Beyond this, the choices seem little affected by what could be read as an effect of identifying with the animal, even though boys and girls who would "like to be a lion" seem slightly less interested in sharing than the others.

The animal questionnaire/game therefore allows us to show that the choice of animal is connected to the social properties of the child (in this instance gender) and that the entertaining nature of the protocol, in particular the fact that the hero is represented in the form of an animal (and not a child) does not hinder the expression of the child's preferences. The systematic analysis of the data as a whole for the five different animals, and particularly the characteristics associated with them, according to gender but also other social variables, will allow us to learn more about the social foundations of the development of moral principles, and this from a very early age.

## Conclusion

This article shows that the responses of 5–6-year-old children are characterised by a relative overall stability. This allows us to affirm that at this early age, children already have opinions and therefore it is worthwhile questioning them directly, in the first person, and without the intermediary of the parents. However, these opinions, likes and dislikes, or moral preferences are still "fragile" in the sense that they are still taking shape and this specificity in the population of young children needs to be taken into account in adapting methods for data collection, if we hope to observe the emergence of children's representations of the social world. More specifically, these particularities in the population of respondents forces us to think about the best ways of reducing desirability bias, accentuated with this age group, which led to the development of questionnaires that are as far removed as possible from the model of a school test. Hence the choice to use entertaining forms of data collection, which proved heuristic, as well as entertaining for the children, in that the protocol implemented improved the quality of data collected. Another way of taking desirability bias into account consisted in not asking questions directly about practices, but rather about opinions and representations (for which there are no – or fewer – "right" or "wrong" answers).

Although in the context of this article, we were limited to a certain number of questions and methodological issues, the latter are inextricably theoretical and bring us to a strong and quite unprecedented response: 5-6-year-old children are indeed a population that can be interviewed by sociologists, using (entertaining) questionnaires, even at a distance (via the digital intermediary of the internet). Their responses must of course be treated and analysed with caution, given that they are the fruit of dispositions that are still being consolidated (Lignier, 2019). Although gender already appears to be clearly a vector of differentiation in children's responses, the influence of other factors, such as social origin, seems less clear, even though more in-depth analysis is needed here. Moreover, it would be interesting to measure the evolution of distributions according to class level and academic achievement. But this is of course why it is so important to observe the socio genesis of children's likes and dislikes, moral preferences, and social sense over the long term through a national cohort study. The possibility of replicating these questionnaire/games some years from now would provide valuable data concerning this socialisation and the progressive shaping of social differences.

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## Notes

1. This sub-group was initially made up of the following members (in alphabetical order) : Nathalie Berthomier, Jérôme Camus, Bertrand Geay, Caroline Guibet-Lafaye, Sylvie Octobre, Nathalie Oria, Julie Pagis, Sophie Richardot, Marion Selz et Christine Tichit.
2. The development and data collection costs for the three questionnaire/games was around 110,000 euro.
3. As was to be expected, the social make-up of the corpus of the children who participated in the questionnaire/games does not exactly reflect the population of the study, because of the mode of administration. There is an overrepresentation of children whose mother is in the socio-professional category of managers or higher intellectual professions (28% compared to 17% in the overall study), a slight overrepresentation of children whose mothers are in intermediary professions (39% compared to 32%) and an underrepresentation of those whose mother is an employee or worker (30% compared to 45%).
4. The *Sims* is a video game that simulates ordinary life, in which players are invited to define an avatar and construct professional or family spheres within the game.
5. As supplementary material to this article, the ELFE survey website provides video recordings that present different response scenarios for the three games: : https://www.elfe-france.fr/fr/docutheque/materiel-enquete/
6. It is worth noting that in the original French, the gender neutrality of these professions is made explicit by adding feminine spelling variations for each profession : *"Ouvrier ou ouvrière sur un chantier", "Maître ou maîtresse d'école", "Chanteur ou chanteuse", "Boulanger ou boulangère", "Homme ou femme de ménage", "Docteur.e".*
7. The fact that social background was not taken into account is the result of the disciplinary (and epistemological) distance discussed above.
8. Cohen's kappa coefficient measures the agreement between two qualitative variables with the same categories. It is typically used to measure the degree of agreement between judges (inter-rater reliability) but can also be applied to measure agreement for an observer (intra-rator reliability) – for example the degree to which the same responses are reproduced by the same respondents at two different times.
9. This was even less surprising given we were not administering a standard questionnaire but an entertaining one; we therefore expected to have a substantial variability in the first part of the questionnaire consisting in choosing the avatar, which was not so much designed to be analysed as to involve the participants in the entertaining opening of the questionnaire.
10. Informative letter sent to parents of the ELFE cohort 10/05/2017.
11. "Ambassador Parents" Survey, internal memo ELFE team, October 2019.
12. In this section, italics are used to emphasize expressions relating to the parents' representations of childhood or fun in the emails cited.

13. It is important to specify however that the parents accepted data collection when their children were even younger (cognitive tests at age 3, health tests including samples etc.) which are by no means fun, and which appear far more "intrusive" or "burdensome". But, unlike our questionnaire, these tests do not claim to be entertaining.

14. But, once again, this is not the case in all social spheres (Rogoff, 1990; Miller et alii, 2012).

15. We would like to thank Rémi Sinthon who performed this concatenation and sent the data to us.

16. With a few minor variations, the question was formulated as follows "according to you, which animal is the nicest/nastiest/most beautiful/ugliest/strongest/weakest/cleverest/stupidest?"

17. The fact that the lion was the only animal chosen that has distinct sex traits forced us to opt for a picture of a lion with a mane. This could have had an impact on the boys' choice, but the fact that the large difference in gender also exists for other animals, which were not presented as "male" or "female" makes this seem unlikely.

18. The protocol asked children to successively associated each adjective to one of the five species; they could therefore attribute several characteristics to a given animal, which is why some (like the lion) were associated with more adjectives than others.

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