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Child-dog pairing in foster or institutional care: benefits and risks of a pilot project in France

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Abstract: A growing number of children live in foster or institutional care worldwide, compromising their health and social future. A child-dog pairing program is being considered by the National Health Commission of the French Federation of Adoptive Families (Enfance & Familles d'Adoption (EFA), Paris, France). Our hypothesis is that the presence of a companion animal allows the foster child to develop their resilience skills, and fosters a secure attachment profile. Potential stakeholders in such a project represent 3 axes: the child, represented by professionals in the field of childhood (i.e., childhood educators, psychologists, and medical and socio-medical staff); the animal, represented by professionals involved in care and education of animals (i.e., veterinarians, canine educators); and the institutions represented by professionals involved in administrative systems for foster children (i.e., administrative, legal, and educational officials). At this stage, the project considers hypothetical cases and not actual cases that professionals have experienced. A preliminary estimation of the benefits versus the risks of this project was sought by the EFA. To evaluate potential risks and benefits of a national pilot project for the placement of dogs in foster children in France. We questioned 59 stakeholders (±51.3 years of age) via a semi-open questionnaire to comment and evaluate on the risks and benefits of pairing foster children with dogs along 3 main axes: the child, the animal, and the institutions. The expected risks/benefits ratios were estimated by the respondents at 27/73, 32/68 and 39/61 for the respective axes of the child, the animal, and the institutions ($p<0.05$). The expected bond between children and animals was frequently predicted by the respondents. Bonding was characterized as free, reliable, stable, and unconditional. The education of both the child and animal was suggested as a priority goal. From the animal perspective, the negative potential effect cited, was the risk of mistreatment. From the institutions' perspective, concordant and expansive sensibilities for each of the administrative and institutional professionals were expected. However, overloading the institutions in terms of work and cost was reported as highly likely. Finally, the quality of the dog as a mediator was predicted in both biological and foster families, for whom in-depth explanations and coaching were suggested as essential for the success of the project. Pairing dogs with foster children was estimated to cost 2.770 euros per year/pair. The current study confirms that the dog would be an obvious life partner for the foster child and that the current pilot project is desirable and feasible.

Keywords: bond; dog; foster children; institutional care; secure attachment profile

HIGHLIGHTS

- The current study identifies the risks and benefits of a pilot project for the placement of companion dogs in foster children in France.
- The benefits of the project were estimated as twice as high as the risks
- Potentially greater benefits than risks were also mentioned for biological and foster families.

INTRODUCTION

The number of so-called foster children (i.e. living in foster or institutional care) grows continuously, worldwide. From the material provided by the "Observatoire National de la Protection de l'Enfance (ONPE)" in France, this number increased by 15% between 2010 and 2019 reaching 308,000 children in 2020 (ONPE 2020). Pathways for foster children can be chaotic, from the first placement to the age of majority, defined as ≤18 years of age (Fisher et al. 2006). These pathways are estimated by the French "Agence Régionale de Santé" (ARS) as unstable in 75% of cases (ARS 2016). They are aggravated by obstacles and accidents of life, such as: frequent changes of environment, and subsequent changing social and emotional contacts.

Despite the search for stable emotional ties, foster children are considered fragile and distant. Only 10% maintain a satisfactory relationship with at least one parent and 25% no longer have legal contact with them. According to the "Observatoire National de l'Enfance en Danger (ONED)", the prevalence of diseases and disabilities, as well as educational (70% of foster children are non-graduates), social (28% suffer from drug addiction or delinquency) and developmental delays; is 2 to 5 times higher among children living in foster and institutional care, than among children living in biological families (ONED 2010; ONED 2013). Between the ages of 18 and 24, the risk of becoming homeless is increased by a factor of 30 (ONPE 2019). Adverse events, implicated in stimulating neurobiological stress responses, likely play a role in shaping neural systems; that contribute to the development of poor social, academic, and mental health outcomes (Fisher et al. 2006). The chasm between the wealth of literature about the relationship between children and animals is remarkable, as well as the paucity of concrete animal mediation actions in the context of child protection. However, we know that the presence of animals in the lives of children, promotes psychic construction by: stimulating the development of empathy (Ascione and Shapiro 2009; Carr and Rockett 2017; Hansen et al. 1999; Hediger and Turner 2014), increasing interactions and social skills (Bulsara et al. 2007; McNicholas and Collis 2001; Montagner 2007), as well as decreasing the feeling of loneliness (Yang et al. 2021). The regular presence of a dog was previously reported to improve the wellbeing of people in all circumstances. Reduced depression and improved emotional wellbeing were reported after

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therapy dog visits facilitated by people working in the nursing field (Clark et al. 2018). A reduction in anxiety and improvement of wellbeing was also reported in students who attended "wellbeing dog sessions" at university, suggesting practical implications of these findings for treatment in Higher Education (Spruin et al. 2023). Unfortunately, there are not similar investigations to evaluate the impact of the long-term presence of a dog, in the life course of foster children.

We assume that the regular presence of a pet, could play a major role in the development of children living outside the initial biological family unit; by promoting the development of stable, warm, and loving relationships (Fisher et al. 2006). We hypothesized that the daily presence of a companion dog would allow the foster child to develop and/or strengthen his resilience skills.

The program in general

At this stage of the child-dog pairing project, the program is still in development. Generally, this research questions the conceptual idea of the child-dog pairing and considers the situation of children, dogs, and foster families in general, as opposed to real cases that professionals would already know.

The child

The choice of children will be determined later from among children taken care of by the French Federation of Adoptive Families (EFA), situated in those provinces choosing to begin the program. The ideal age of the child should be at least 8 years old. The local EFA team will ensure that the child's actual maturity corresponds to their biological age. This age is also chosen so that the child can reach the age of majority (18 years) and exit the complicated child

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Figure 1: Illustration of a child/dog pairing

protection system with the presence of the dog, whose life expectancy between 11 and 14 years would be compatible with the project period (Figure 1).The dog

The dog approach is currently managed by a multidisciplinary team that includes: an animal ethologist, a veterinarian, and a specialized dog trainer. They are all affiliated with the National Veterinary School of Alfort, France (ENVA), and co-authors of this study. The selection of the dog, proceeds from the same conceptual principle of globality as for the child. It is essential not to confuse the child in care with a disabled child. For the child in care, the dog is expected to provide permanent and lasting psychological support. This will differentiate it functionally from an assistance dog, which is expected to respond to technical and physical situations involving direct management of the child (working dog/guide dog, dog for diabetic children, etc.). The selection and training of the dog will therefore be different. In the case of a dog intended for the child in care, the interactions (complicity, feeling of belonging, and forms of attachment) will take priority over the technical and physical abilities of the dog. Apart from attack, guard or defense dogs; all dog breeds will be considered in the project.

The pet should ideally be 2 years-old, and sourced from a shelter or animal rescue company. This choice of origin was decided by the ENVA team to respond to an altruistic approach towards shelter animals (the idea of a second chance for the dog being analogous to a second chance for the child). Alternatively, the dog could come from a breeding program for trained dogs.

The characteristics of the dog would include: a medium size to facilitate the integration of the dog into families regardless of where they live; a long-life expectancy (between 11 and 14 years); a docile, adaptive, enthusiastic character; the presence of physical abilities allowing “sporting and fun” activities, with the ability to live in an apartment if necessary.

A dog selection grid, currently being developed by ENVA members, will analyze: the classic criteria for veterinary monitoring (dogs age, health, administration, and characteristics), and several behavioral aspects (presence of aggressiveness, fear, reactions to separation, attention seeking, predation, excitability, sensitivity to pain, etc.). Such criteria suggesting instability of the dog during veterinary consultation will be eliminatory. The attributes deemed suitable for a “child bonding” dog will be at the heart of the choice of final dog candidates.

Several dog candidates will be presented to each child to evaluate the compatibility between the child and the dog. This evaluation will be carried out in 3 phases: 1) an initial education phase for the dog (Figure 2), already involving the child as a participant to allow the bond to emerge, 2) a phase in the host family to resolve daily constraints, and 3) a field work phase to enable the establishment of social life.

The family

The recruitment of the host family will be carried out by the local EFA department located in the province carrying out the project. It will be done on a

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Figure 2: Illustration of the education of the dog by professionals.

voluntary basis. The family will have knowledge and/or experience of the canine world and will benefit from specific education in child-dog interrelationships.

The protocol to implement the program

There is no final protocol at this stage of the project. It is expected that local departments will determine their own work protocols based on their territorial and human characteristics and the specificities of the child selected for the project. Concerning the child: the role of the child's contact professional will be a key element of the success of local child/dog pairing, through his relational proximity to the child, namely his ability to collect comprehensive data concerning the child, the foster family and the interactions that will develop. This professional will be responsible to assess the positive or negative dynamics generated. At the same time, support consisting of a child psychiatrist and a psychologist will be associated with regular and reinforced monitoring of the child and the family.

Concerning the dog, the recruitment of a dog educator who can be mobilized quickly and integrated into the ENVA team is scheduled. The most complex situations will be analyzed collectively during regular ENVA videoconference sessions. A dog's well-being template, previously developed by the veterinary team, will be used. Local program protocols brought together in the pilot project will be subject to a vote by elected parliamentarians within the province

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where the project will take place.

Before starting a national pilot project for the placement of companion dogs, designed to foster a secure attachment profile in foster children in France, a preliminary study on the estimated positive and negative effects, and the risks and benefits of the project was asked by the French Federation of Adoptive Families (Enfance & Familles d'Adoption (EFA), Paris, France). This study consisted of questioning the future mentors - all professionals in their respective fields, about the project on the following 3 axes: the child, the animal, and the institutions (i.e., social, legal, and educational assistance to children).

This study aims to evaluate and identify: 1) the expected positive effects for the 3 axes (child, animal, institutions), 2) the expected negative effects for the 3 axes, 3) the key elements relating to the 3 axes to consider, before the development of the project, and 4) the estimated benefit/risk ratio of the project for the 3 axes. No institutional ethical approval and no participant's informed consent were required before completing the survey for this study.

MATERIALS and METHODS

Participants

A questionnaire was sent to various professionals (participants), confronted with at least one of the 3 main axes mentioned above: professionals from the childhood axis (i.e., specialized early childhood educators, psychologists, and medical and socio-medical staff), the animal axis (i.e., veterinarians, canine educators, and canine ethologists) and, finally, the institutional and administrative axis (i.e., administrative, legal, and educational officials). Biologic and adoption families were not invited to complete the questionnaire in this study.

The population of participants was a target population, identified among professionals in the department belonging to the first author of this study (Département de l'Allier, France). It was a population representative of the "field", the same facilitator who hypothetically must experience the establishment of a pair as closely as possible, including those participants coming from the academic world.

They were presented with a conceptual scenario of inserting a dog into a child's living context, without specific information regarding the child, the dog, or the foster family, all considered as hypothetical cases and not as real cases. Our ambition was not to influence their own proposals regarding the key elements that they were asked to identify (question 3 of the questionnaire).

The participants had no more specific knowledge about animals than a general population. Only participants from the animal world had in-depth knowledge of human-animal and particularly child-animal interactions. Participants from

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the social world were optimally trained in the concepts and processes of attachment in children.

Materials and procedure

A qualitative survey, including semi-open questions, was developed for this study. Surveys were sent and returned in Google Form format (Online Supplement 1). The objective was to assess the potentially positive and negative effects as well as assessing probable risks for each of the three areas of the project: the child, the animal and the institutional services. The four questions were similar for each of the 3 axes concerned by the project. Three consisted of open questions, inviting the respondents to estimate the potential positive and negative effects of the project. The fourth question aimed to estimate the potential risk-benefit ratio of the project out of a total of 100 (example: 40/60). Reviewing the answers to the questionnaire, professionals had the opportunity to judge the feasibility of the child-animal paring project according to one of the 3 axes where they were experts. More broadly, they were also invited to give their opinion on the other 2 axes of the study.

The four questions were formulated as follows:

1. In your opinion, what could be the expected positive effects for the axis (1 to 3). Please list 1 to 3 effects ranked from most to least important.

2. In your opinion, what could be the expected negative effects for the axis (1 to 3). Please name 1 to 3 effects by ranking them from most to least important.

3. In your opinion, what should be the key elements relating to the axis (1 to 3) to consider, before the development of the "child/animal" project? Please list 1-3 key elements from most to least important.

4. In your opinion, what is the estimated benefit/risk ratio of the project for the axis (1 to 3).

Through the analysis of the responses on question 4, three potential orientations could emerge: a favourable opinion with a risk/benefit balance in favour of the benefits, an unfavourable opinion with a risk/benefit balance in favour of the risks, or a neutral opinion with a non-significant risk/benefit balance.

Finally, participants were invited to estimate the importance of each of the three axes (score 0-10), and to suggest alternatives to a secure attachment to a live dog.

Data analytic strategy

All completed questionnaires were subject to data analysis. Questionnaires with missing responses were excluded. The technique of three-encodings (open, axial, selective) was used to identify keywords, corresponding to answers 1 to 3 in the 3 axes (Gauthier 1992). In practice, we used the SCRIBBR (www.scribbr.fr) online support (www.scribbr.fr) to be in line with the rules of

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the three-encoding process, step by step (see: https://www.scribbr.fr/methodologie/codage-entretiens/).

The first step of encoding, the open coding, led to the transcription of responses into themes. Themes represented chosen fragments of responses that provided the main message of the responses.

The second step of encoding, the axial coding, led to the transcription of themes into categories, by crossing of themes between them. Categories represented a more specific term that is common to several themes.

The third step of encoding, the selective coding, led to the transcription of categories into keywords. Keywords came from the selection of the most cited categories that were transcribed into a single keyword.

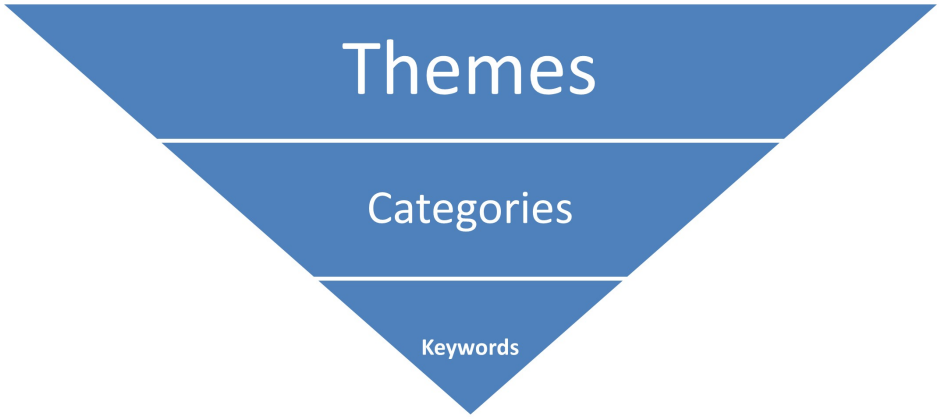

Figure 3: The three-encoding technique working like a funnel.

The three-encoding technique works like a funnel: many themes produce a fewer number of categories, ultimately producing a limited number of keywords (Figure 3).

Specific keywords were connected to participant's responses to make connections between the different responses and draw conceptual ideas for carrying out the pilot project.

Here is an example of the three-encoding technique: the response of a participant led to the theme: "children who survive a complex journey can give mad love to an animal". This theme and others led to the production of the category: "attachment". Finally, this category and others led to the production of the keyword: "bond".

The exploitation of the participants' responses to questions 1 to 3 was done by the authors PB and EP separately, and then cross-referenced with each other. We tested the reliability of the coding method through the comparison of our coding results with those of third neutral external referee (MT), who was neither a child or animal professional, nor a person privately concerned with the main 3 axes.

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	Child			Animal			Institutions			Total
Keywords	+	-	Key	+	-	Key	+	-	Key	
Bond	43	21	3	51	10	14	8	3	5	158
Emotions	22	6	2	10	25	18				83
Education			28			52			2	82
Mistreatment		8			55					63
Best							53			53
Valuing	26		1	13		3				43
Respect			22	12	2	6		1		43
Empowerment	20		18	1		2				41
Socialization	21			4		8				33
Comprehensibility							1	17	14	32
Health	1	9	2	1	2	3	6	4	3	31
Adhesion			12				6	2	9	29
Cost							1	17	8	26
Loss		19	3					4		26
Overload								25		25
phobia/fear		15	6							21
Attachment	14		3	2						19
Taming			9			7			2	18
Referrers							2	5	10	17
Education/training								2	10	12
Legality								11	3	14
Stimulation	6			8						14
Dynamic effect							9		4	13
Evaluation									11	11
Environment		6			1	3				10

Table 1. Estimated effects of the child-animal pairing project for the 3 axes (child, animal, and institutions): frequency of the main keywords from the participants' responses.

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Through the analysis of the responses on question 4, three orientations could emerge: a favourable opinion with a risk/benefit balance in favour of the benefits, an unfavourable opinion with a risk/benefit balance in favour of the risks, or a neutral opinion with a non-significant risk/benefit balance. Finally, participants were invited to estimate the importance of each of the three axes, and o suggest for secure attachment to a live dog.

A Chi-Squared test was used to compare proportions (MedCalc Software Ltd, Ostend, Belgium). P-values less than 0.05 were considered as statistically significant. No institutional ethical approval and no participant's informed consent were required before completing the survey for this study.

RESULTS

During the first quarter of 2022, 65 questionnaires were circulated. Of the 61 responses, 59 were considered for future analysis. Two returned questionnaires were excluded from data analysis due to missing responses. The referee MT had to intervene in 5% of disputed cases in which there was no agreement between the two coding authors.

Participants

The 59 participants were all directly involved in a professional or personal way in the 3 axes concerned. They were 51.3 years old on average, 81% were women, 29% were directly confronted with a child in care, and 5% were themselves former foster (placed) children.

About 22% were family assistants, 20% were professionally related to animals (i.e., animal educators or veterinarians), 20% were administrative or legal staff, 12% paramedics, 10% medical, 9% of respondents were teachers, and 7% had no priority identity (i.e., retired, farmer). The priority focus reported by the professionals was animal in 41% of cases, child in 34% of cases, and administrative or institutional aspects in 25% of cases.

The proportion male/female (19/81% participants) corresponds to the actual presence observed in the relevant child protection services at all levels. Sixty percent of participants were over 50 years old, which suggests an experienced population of participants. Participants were all French Caucasian people. The average level of study was Baccalaureate or College (≥3 years after High School), suggesting a good level of education and good analytical capacity.

Identification of themes, categories, and keywords

In total, 26 keywords were selected and analysed (Table 1): 16 for the child axis, 13 for the dog axis, and 16 for the institution's axis. Some keywords were common to two (ex: emotions) or three axes (ex: bond), but some others were specific to a single axis (ex: best in the axe of institutions), suggesting specific priorities according to the 3 axes.

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Expected effects, and key elements (Questions 1-3)

The trends in responses to questions 1 to 3 are reported in table 1, axes by axes. This table reports all the keywords according to the frequency of appearance in the responses. The potential positive and negative effects suggested by the participants, as well as the key elements to be considered before developing the projects, are described below for each of the 3 axes.

Estimated effects in children

Positive effects

Among 8 estimated positive effects, 4 main keywords were expressed as important keywords: "bond, valuing, emotions, and socialization". The keyword "bond", expressed 1.6 times more than all other keywords, is mentioned as filling a gap. The bond between the child and animal was characterised by the categories suggested by the participants in their responses: free, reliable, stable, unconditional, and non-judgmental. A participant said: "In my opinion, dogs always show signs of affection, even if the child can, at times, ignore it". This sentence suggests that the child would be loved by the animal unconditionally and for himself. The keyword "valuing" was suggested in terms of developing confidence and self-esteem, and also emotions in terms of managing them. The keyword "emotions" essentially implies the possibility of managing emotions seen as negative: primary emotion (anger) and secondary emotion (anxiety). The choice of the keyword "socialization" was done from a wide diversity of categories: "sharing, social facilitator, empathy, respect for others and respect for animals". The richness of vocabulary suggests the importance of the notion of socialization in this project.

Negative effects

Among 7 negative effects identified, 3 main keywords dominated: "bond, loss and phobia". A strong bond could be toxic through emotional dependence on the animal. In addition, the risk of "loss" of a loved companion could be experienced as traumatic. This is illustrated by a participant: "Pay attention to the age of the child at which he will receive his dog. Damage could be caused if animals die in the middle of the child's adolescent crisis". This citation supports the choice of dogs that can accompany the child until the age of maturity (18 years). At this age, the child officially leaves the child protection context. Finally, the keyword "phobia" is also found in the responses as a risk adding to the child's complex journey. However, we believe that this risk is low. Reported health risks also concern the notions of allergies. Note that 6 participants did not consider any risk.

Key elements to consider

Twelve keywords emerged, of which three were priority keywords: "education, respect and empowerment". The main keyword, education of the animal, included a general theoretical knowledge, a progressive approach (reciprocal taming) and learning appropriate gestures and reactions. One participant wrote: ""For me, education reminds me of the famous taming of the little

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prince, i.e. allowing time for the impregnation of one by the other" (note of the authors: "The Little Prince" is a book written by Antoine de Saint-Exupéry, it tells the story of the taming of the little prince with a fox and vice versa).

Estimated effects in animals

Positive effects

Among the estimated positive effects for the animal, nine keywords were selected, of which four were priority keywords: "bond, valuing, respect and emotions". One keyword dominated: the bond. This positive effect was mentioned in 50% of responses, where the same theme comes up: "Creation of a bond of attachment". A participant wrote: "Since Covid, more and more animals are abandoned. This is an opportunity for a dog to find a good owner forever". For 50% of responses, the "bond" was linked to qualities such as: complicity, faithful companion, inter-species love, confidant. The keyword "valuing" was suggested as a snowball effect: development of confidence, opportunity to develop the dog's unique skills as during the time to play. The keyword "respect" supported the idea that animals gain respectability. Care, kindness, recognition and attention is due to animals. The keyword "emotions" suggested that, in its relationship with the child, the dog could benefit from added value by developing an essential primary emotion such as joy and secondary emotions such as pleasure, satisfaction or serenity.

Negative effects

Among six negative effects, the main negative effect cited was the risk of "mistreatment". "Bond" and "emotions" were also suggested at a lower rate. Regarding the mistreatment, one participant wrote: "Animal abuse is not a myth. This is everyday report in newspapers. The dog must not be the release point for either the child or the host family". This sentence suggests the participant's fear that the dog could be mistreated by the dog's entire environment, i.e. potentially by the child but also by the foster family. Mistreatment was considered both quantitatively and qualitatively. Quantitatively in the sense of the frequency of harmful situations experienced by the animal. Qualitatively through the notions of harm intensity- from slight neglect to violent acts, affecting the security of the animal both in its physical and psychological dimensions.

Key elements to consider

Ten key elements were considered, of which three were priority keywords: the education of dogs, the emotions, and the bond. The education of dogs appeared in 44% of the answers. The following categories leading to the keyword "education" were produced: "patience, obedience, docility, non-biting, soft, balanced, adaptation" - all responses of animals to the rhythms of the child and his environment (i.e. noise, various movements). The keyword "education" is illustrated by the response of a participant: "I am convinced that the education of the dog contributes, in a mirror, to the education of the child. Imposing rules on the dog should naturally impose themselves on the child". This sentence reinforces the idea of reciprocal education (mutual coaching) from the child to

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the dog, and from the dog to the child. The choice of the keyword « emotions » implied that animals would be able to manage their own negative emotions such as aggression.

The keyword "bond" implied that the creation of a bond of attachment is very present here. One master for the animal was also an important principle mentioned by the participants.

Estimated effects for institutions

Positive effects

The responses were very heterogeneous. Among 8 keywords, "better" was chosen. It evokes a set of beneficial effects. The child gains a companion and improves, thanks to the "appeasement", his integration, well-being, balance, security, all categories suggested by the participants. This all leads to a moral expansiveness linking each of the administrative and institutional professionals. The category "Appeasement" was found from the response of a participant: "We might think that a child soothed by a pet will be a child less often in conflict with his surroundings. This would mean, for us, as childhood professionals who follow him, intervening less to manage his conflicts". This sentence suggests that the presence of the dog is expected to indirectly reduce the workload of child welfare professionals.

Negative effects

Among six keywords, four main keywords were mentioned: "overload, cost, comprehensibility and legality". The overload included the categories: "more staff, more procedures, more easements, more constraints, more recruitment, more time, more organization, and more accountability". "Overload" is suggested by a participant: "Referrals for children in care are already overloaded. Honestly, adding dogs in the story is just impossible". This citation shows the fears of work overload on institutions, and justifies preparatory work for the project in advance.

The "cost" was mentioned without being explanatory. If unanimity seems acquired at an additional financial cost, the questions is: "who pays?" and "what do we pay?". The keyword "comprehensibility" included a wide range of words questioning the readability and clarity of the project. This keyword brings together a large set of questioning words: readability, clarity, understanding, the project approach. A need for explanations, for clarifications, is mentioned, mainly with regards to the choice of animals, their legal status, the person who is responsible for them, and their education. "Legality" was evoked especially regarding animals. For example: are animals under the responsibility of a shared responsibility of a department; or the responsibility of a single person? In addition, the concept of a civil insurance contract was considered necessary to deal with inevitable future complaints, claims or accidents. The difficulty for the animal to accompany the child in all places and circumstances was also mentioned: "Will an animal accompanying a child in care have access to hospital rooms in case of care? Another participant wrote: "The person responsible for a dog is its owner. If the owner is a minor child,

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and therefore not responsible, who is really responsible for the dog?". This citation underlined the importance of developing legal structure in the project.

Key elements to consider

Keywords offered here a significant dispersion of words. Seven keywords had less than 6 points difference. Among twelve keywords, six were mentioned as having to be perfectly defined in advance: "comprehensibility, evaluation, referrers, education, adhesion, and cost. Those keywords were not specific to our project. They are, typically, of interest to any project, whatever it may be.

Estimated benefits and risks (Question 4)

In response to question 4 of the questionnaire, Table 2 presents the ratio between the potential risks and benefits to initiate the project. The risks/benefits ratios estimated by the participants were: 27/73, 32/68 and 39/61 for the axes of the child, animal, and institutions, respectively ($p<0.05$).

Estimated importance of each of the three axes

Participants were asked to estimate the importance of each of the three axes via a 10-points scale (0: not important; 10: very important). Mean [min-max] scores were quoted at 9.2/10 [3-10], 8.3/10 [1-10], and 6.4/10 [0-10] for the child, animal, and institution axes, respectively.

Alternatives to a live dog

Finally, participants were questioned about alternatives to a stable secure attachment to a live dog. Another animal was suggested by 56% of participants, without overlap, except the proposal of a horse by two respondents.

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DISCUSSION

In this study, professionals confronted with the well-being of children and animals, or involved in the administrative procedures of managing foster children; were invited to give an opinion on the risks and benefits of a project involving the placement of animals with children, living in foster or institutional care. To our knowledge, this is the first study to seek the opinion of the actors delivering a child-animal pairing project. Above all, this is the first exploratory work to assess the perceived impact of such a program.

This study has sparked interest for such a pilot project in France, both for the child-dog pair and for the institutions responsible for the placement of foster children. Unequivocally and significantly, the benefits of the project were estimated by professionals working alongside children, animals, and institutions; to be twice as high as the risks.

These results are in line with a study suggesting that 52% of Parisian children asked for a pet and that 46% evoke potential emotional support of animals,

	Child	Animal	Institutions
Benefits (%)	73	68	61
Risks (%)	27	32	39
95% Confidence Interval	28.4-59.7	18.1-50.8	4-38.1
Chi-squared test P value	$p < 0.0001$	$p = 0.0001$	$p = 0.0173$

Table 2. Comparison of the estimated potential risks and benefits suggested by the 59 participants

while remaining aware of the responsibility to take care of it (Micoud 2009). Ironically, our encouraging results contradict the opinion of Child Welfare, where the presence of animals appears only 3 times in 25 reports (DGCS 2014; Séverac 2018). The potential positive effects for children and animals were suggested by participants almost unanimously, and the notion of bond dominated. One Voice has shown leadership in recognizing the link between animal mistreatment and violence against humans (One Voice n.d.). In this context, the joint education of both the dog to the child and the child to the dog, would be a preventive action to avoid violent situations, such as mistreatment of the animal by the child.

Families would ideally be included in the project, through extensive educational efforts to promote understanding of the project in depth. However, the overload of work for families and institutions was mentioned. Despite this, a beneficial spiral could take place, which would affect the most distant administrative strata, or even the political strata. Finally, the additional costs would be offset by the financial gain of a more virtuous pathway for the child.

The notion of bond could play a powerful role in the harmonious development of the child by: activating desirable character strengths, learning new skills, facilitating the management of emotions, and, in the long term, lead to socialization, accountability, academic and professional success. On the other hand, animals seem totally spared by this risk while we know all the damage caused by dogs that are emotionally bored (Hoummady 2014; Ouest-France 2013; Silliart and Vieira 2015; Vieira 1999).

Perspectives of the project of creating child-dog pairs

Our pilot project questioned the ratio between the risks and benefits of delivering child-dog pairs. A companion dog placed with a foster child around the age of 10 would be ideal: the dog would potentially be alive until the youngster's age of 22. This age corresponds to the inclusion of the young former foster adult in a professionalizing context.

From the institutions point of view, the notion of "overload" is a negative effect to consider. Just like the child, animals are not completely autonomous. A specialized team for preparation and follow-up of dogs would be necessary,

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which has a cost. Despite the positive spiral expected with the arrival of an animal (remember the positive risk/benefit ratio at 39/61 for the institutions), the financial aspects represented a major obstacle to developing the project, and arguing about the positive effects in the context of such long-term investment is mandatory: the cost/effectiveness ratio should be high and obvious. It should integrate the direct, the indirect and opportunity costs of the pilot project (Vernay 2003). In France, the annual expenditure per foster family placement averages €53,000 per year and per child (ARS 2016). According to the Saint-Ex study (ARS 2016), the cost to place children in foster and institutional care represents a total cost of 10 million euros per year (Baudis 2011; Dalloz 2023; Seppey 2013). As a comparison, the present pilot project involving child/dog pairing, would cost a total of 2,770 euros per year per pair (Badin 2022). Note that this calculation does not consider the adult gains projected by this pilot project.

Finally, without surprise, participants suggested that the axis of the child is essential and has priority, as suggested by being scored at 9.2/10 points. The animal, the child's companion in the project, is considered the second most important axis, just behind the child, but well ahead of the institutions. When asked for alternatives to a stable secure attachment to a dog, the majority of participants answered that another animal could replace the dog, but few other animals were cited. Running projects with animals other than dogs were not reported by participants.

Limitations of the study

Our study is based on responses from a limited number of participants. In addition, respondents were likely to be motivated by the project, and therefore could have influenced the results in favour of the pilot project. Indeed, the respondents were motivated, and encompassed in relatively equal parts the three axes of the project: child, animal, and institutions. Another limitation is not being able to invite participants from the biological and foster families. However, this would have been particularly difficult to organize, and perhaps ethically questionable.

Regarding the methodology, the estimated positive and negative effects of the pilot project were based on the analysis of the keywords proposed in open responses. The sorting of answers, the encoding and the choice of keywords is undoubtedly hinging on a certain subjectivity. On the other hand, we believe that our methodology also contributed to the richness and originality of our study, which brings a new perspective to the development of the child/animal pairing project in France and internationally. Another limitation of the study is that we did not consider to establish the intercoder reliability. Alternatively, we used a referee who made a final decision regarding the selection of the right keywords - 5% of discussed choice of keywords.

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CONCLUSIONS

The professionals who participated in our study via our questionnaire, recognized the major positive role played by the dog in the life path of the foster child - on his physical, psychological, educational, social, and academic wellbeing. The analysis of risks and benefits, globally estimated at ±30/70, significantly supports the estimated benefits of the pilot project. The current study confirms that the dog would be an obvious life partner for the foster child. The cost of the project is a potential obstacle to its development. However, a pilot project based on the delivery of pairing dogs and foster children, would be limited to 2,770 euros per year/pair, which positively supports the development of the current child-dog pilot project in France.

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The authors declare no competin interest.

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REFERENCES

ARS. 2016. Agence régionale de Santé, Pays de Loire: Recherche Saint-Ex 2011-2016. France. https://www.reseau-naissance.fr/data/mediashare/to/4su7ht9roxcvbavbzzat1k49znxdqp-org.pdf

Ascione, F.R., and Shapiro, K. 2009. People and Animals, Kindness and Cruelty: Research Directions and Policy Implications. *Journal of Social Issues*, 65(3), 569-587. https://doi.org/10.1111/j.1540-4560.2009.01614.x

Badin, P. 2022. Travil préliminaire pour un projet pilote autour du lien enfant-animal en context de protection de l'enfance ou le chien assistant de l'enfant confié. Diplôme Universitaire de relation d'Aide par la Médiation Animale. Université Clermont Auvergne, Faculté de Médecine.

Baudis, D. 2011. Vie publique. Enfants confiés, enfants placés : défendre et promouvoir leurs droits - Rapport 2011 consacré aux droits de l'enfant. https://www.vie-publique.fr/rapport/32159-enfants-confies-enfants-places-defendre-et-promouvoir-leurs-droits

Bulsara, M., Wood, L., Giles-Corti, B., & Bosch, D. 2007. More Than a Furry Companion: The Ripple Effect of Companion Animals on Neighborhood Interactions and Sense of Community. *Society & Animals*, 15(1), 43-56. https://doi.org/10.1163/156853007X169333

Carr, S., and Rockett, B. 2017. Fostering secure attachment: experiences of animal companions in the foster home. *Attachment & human development*, 19(3), 259-277. https://doi.org/10.1080/14616734.2017.1280517

Clark, S., Smidt, J., Bauer, B. 2018. Impact of therapy dog visits on outpatient nurse welfare and job satisfaction. *Pet Bahaviour Science*, 6, 8-15. https://doi.org/10.21071/pbs.v0i6.11172

Dalloz 2023. Forum Famille. La protection des enfants : une « petite loi » pour de petits pas. http://forum-famille.dalloz.fr/2021/12/23/la-protection-des-enfants-une-petite-loi-pour-de-petits-pas/

DGCS 2014. Direction générale de la cohésion sociale. Ministère des Solidarités et de la Santé. France. https://ufnafaam.org/wp-content/uploads/2017/12/ref_agremt_assistants_familiaux_jfh.pdf

Fisher, P.A., Gunnar, M.R., Dozier, M., Bruce, J., and Pears, K.C. 2006.Effects of therapeutic interventions for foster children on behavioral problems, caregiver attachment, and stress regulatory neural systems. *Annals of the New York Academy of Sciences*, 1094(1), 215–225. https://doi.org/10.1196/annals.1376.023

Gauthier, B. 1992. Recherche sociale. De la problématique à la collecte des données, (2e éd.), Sillery (Québec), Presses de l'Université du Québec, Canada. www.persee.fr/doc/homso_0018-4306_1993_num_110_4_3362

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Claire Philippe-Peyroutet
Matthieu Delpeuch
Michel Toussaint

Hansen, K.M., Messinger, C.J., Baun, M.M., and Megel, E.M. 1999. Companion Animals Alleviating Distress in Children. *Anthrozoös* 12(3), 142–148. https://doi.org/10.2752/089279399787000264

Hediger, K., and Turner, D. 2014. Can dogs increase children's attention and concentration performance? A randomised controlled trial. *Human-animal interaction bulletin*, 2(2), 21-39. https://doi.org/10.1079/hai.2014.0010

Hoummady, S. 2014. Facteurs environnementaux et agressivité chez le chien. Ph.D.thesis, Creteil University, France. https://academie-veterinaire-defrance.org/fileadmin/user_upload/DossiersThematiques/BienEtreAnimal/TheseENVA_SHoummady2014.pdf

McNicholas, J., and Collis, G.M. 2001. Children's representations of pets in their social networks. *Child: care, health and development*, 27(3), 279–294. https://doi.org/10.1046/j.1365-2214.2001.00202.x

Micoud, A. 2011. Mais qu'ont-ils donc à tous s'occuper des animaux? Stéphane Frioux et Emilie-Anne Pépy. L'animal sauvage, entre nuisance et patrimoine, ENS Editions, pp.177-187. https://shs.hal.science/halshs-00566311

Montagner, H. 2007. L'enfant et les animaux familiers. Un exemple de rencontre et de partage des compétences spécifiques et individuelles. *Enfances & Psy*, 35:15-34. 10.3917/ep.035.0015 https://doi.org/10.3917/ep.035.0015

ONED 2010. Appel d'offres thématique 2010 de l'observatoire national de l'enfance en danger. France. https://www.onpe.gouv.fr/system/files/ao/oned_creaira_rapport.pdf.pdf

ONED 2013. Observatoire national de l'enfance en danger. France. https://www.onpe.gouv.fr/system/files/ao/aot2010_sellenet_rapportfinal.pdf

ONPE 2019. Observatoire national de la protection de l'enfance. France. https://onpe.gouv.fr/chiffres-cles-en-protection-lenfance

ONPE 2020. Observatoire national de la protection de l'enfance. France. https://onpe.gouv.fr/system/files/publication/rapport_pupilles_31dec2018_juin2020_1.pdf

One Voice (n.d.), France. https://one-voice.fr/fr/read/mXnz6DhbIwYkR9yuqd8-Ig?lang=fr

Ouest-France 2013. https://www.ouest-france.fr/pays-de-la-loire/son-chien-sait-rester-seul-nicolas-va-retravailler-1433584

Seppey, E. 2013. Les enfants placés ont-ils des droits? Master of Arts in Children's Rights. Institut Universitaire Kurt Bösch, Switzerland. https://bettercarenetwork.org/sites/default/files/Les%20enfants%20places%20ont%20ils%20des%20droits.pdf

Pet Behaviour Science
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Pet Behaviour Science
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Philippe Badin
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Elsa Péron
Claire Philippe-Peyroutet
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Michel Toussaint

Séverac, N. 2018. Les assistantes familiales, travailleuses du care : le sensible comme éthique de la relation en actes. Sociétés et jeunesses en difficulté. http://journals.openedition.org/sejed/9053

Silliart, B., and Vieira, I. 2015. Comportement du chien. Clinique et thérapeutique. Editeur Point Vétérinaire. https://www.lepointveterinaire.fr/boutique/livres/comportement-du-chien-clinique-et-therapeutique.html

Spruin, E., Islam, S., Wornast, T., Dempster, T. 2023. Examining the Effects of Animal-Assisted Activities Against Standard Treatment in a University Setting. *Pet Bahaviour Science*, 14: 1-21. https://doi.org/10.21071/pbs.vi14.15225

Vernay, D. 2003. Le chien, partenaire de vies. Collection Santé Mentale. Edition Erès, France. DOI : 10.3917/eres.verna.2003.01. https://www.editions-eres.com/ouvrage/1239/le-chien-partenaire-de-vies

Vieira, I. 1999. Le chiot: troubles du développement et de l'acquisition des conduites sociales. *Bulletin de l'Académie Vétérinaire de France*, 152(4), 353-360. DOI : 10.4267/2042/62873. https://www.persee.fr/doc/bavf_0001-4192_1999_num_152_4_11544

Yang, H., Howarth, A., Hansen, S.R., Harrell, L., and Thatcher, C.D. 2021. Understanding the Attachment Dimension of Human-animal Bond within A Homeless Population: A One-Health Initiative in the Student Health Outreach for Wellness (SHOW) Clinic. *Journal of applied animal welfare science: JAAWS*, 24(4), 357–371. https://doi.org/10.1080/10888705.2020.1801434

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