

# Emotions and Bonds Within Canine Teams Working in the French Army

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## Abstract

The human-dog relationships within the teams working in olfactory search within the French Armed Forces have not been investigated through an exploratory and qualitative approach. In order to expand knowledge on this professional and relational modality, semi-structured interviews were conducted with dog handlers from the French Army (n=16) performing explosive device detection and search and neutralization of individuals. Among the themes and sub-themes identified during thematic analysis, the relationships and interactions between humans and dogs emerge from canine individualities, emotions, and interpersonal bonds. The results suggest that the relationships woven between humans and dogs conducting olfactory searches in the French Army are multifaceted. The human-dog relationship in canine military teams is based on multiple characteristics such as bonds, emotions, affection, trust, communication, care, mutual support, technical learning, cooperation, interdependence, and instrumental factors. This study highlights the importance of valuing moments of closeness between the handler and the dog, outside of training and operational contexts. Furthermore, the opportunity to enhance the emotional skills of handlers is of interest in helping some to regulate their emotions, so as not to disrupt or even to assist their dog.

**Keywords:** Working dogs, human-canine relationships, interpersonal bonds, French Army, qualitative method

## 1. Introduction

In the military, canine teams represent a technical expertise that supports military missions. In this context, death is present, it can happen to the military, to their comrades, to civilians, to their dog. Death can also be inflicted (Goya 2015). Factors that may have beneficial or deleterious effects on performance, such as bonds and emotions, within an interspecific team in a cooperative situation, represent scientific interest while being underexplored. This qualitative study focuses on the relationships and interactions within canine (K9) teams involved in explosives detection and patrol duties within the French Armed Forces. Specifically, the role of emotions and interpersonal bonds within K9 teams is presented.

### 1.1 French Army Canine Teams

The French Army's missions include defending the national territory and its population, operating both within France and abroad. Abroad, its role is to ensure the protection of French citizens while also safeguarding the interests of France and its international partners.

Canine teams support military missions through the unique abilities of dogs and the particular skills that emerge from the human-dog partnership. These teams operate in contexts with varying degrees of risk and intensity, in environments ranging from relatively stable to highly degraded. The specialized canine functions include securing military facilities, searching for and neutralizing individuals (patrol dogs/aid in search and neutralization), as well as detecting non-biological materials (explosives, ammunition, narcotics, fuels). Dogs are selected between 10 and 24 months of age, sourced from professional organizations that train working dogs, breeders, families parting ways with their companion dog, or shelters.

### 1.2 Emotions and Human-Dog Bonds Within Military Teams

Scientific literature on working dogs in the Armed Forces has primarily focused on performance, selection, necessary qualities, and training modalities (Sinn & al., 2010; Lazarowski & Dorman, 2014; Sherman & al., 2015; Foyer & al., 2016; Troisi & al., 2019; Lazarowski & al., 2020; Bray & al., 2021). Other studies have questioned handlers about

expectations for explosive detection dogs (Farr & al., 2021) and about beliefs and representations impacting military canine well-being (Chaniotakis 2018). Bonds between human and dog are defined as “a unique, dynamic and two-way (reciprocated) relationship between a person and an animal, one in which each member can influence the other’s psychological and physiological state” (Samet & al., 2022). The time spent together training, on missions, and during downtime, as well as the cooperative nature inherent in olfactory tasks, foster bonds within the human-dog dyad. The importance of these bonds and relationships in communication and task performance has been emphasized in the scientific literature (Haverbeke & al., 2008; Szetei & al., 2003; Troisi & al., 2019). The possibility of unintentional influence by the handler during the dog’s search for the target odor has been previously studied (DeChant & al., 2020; Lit & al., 2011). Living at home and engaging in sports within Belgian military teams positively influence the performance and well-being of the dogs (Lefebvre & al., 2007). Military dogs were found to perform better in detection situations when their handler was under stress (Zubedat & al., 2014).

In her review of current research on animal emotions, Bovet (2023) emphasizes that the emotional experiences of animals are now considered based on points of convergence with human emotional experiences. She adds that what is now being questioned is more about the nature of animal emotions and the animal species capable of experiencing them. It is now accepted that the six primary emotions (joy, surprise, fear, sadness, anger, and disgust) referenced by Ekman (1992) are experienced by dogs. While the intensity may require physiological investigation, their valence can be identified through observation of the dogs. Their behaviors and body and facial expressions allow for the determination of canine emotions (Mota-Rojas & al., 2021). Previous scientific research has demonstrated dogs’ ability to recognize human emotions and their valence (Albuquerque & al., 2016; Müller & al., 2015; Nagasawa & al., 2011) and to rely on emotional information conveyed by humans (Albuquerque & Resende, 2022). Emotional information perceived from humans (familiar or unfamiliar) allows dogs to adjust their behavior and regulate their emotions (Merola & al., 2014; Ford & al., 2019). Humans attribute a variety of emotions to dogs, and these canine emotions are considered similar to human emotions (Konok & al., 2015). Canine behaviors associated with certain canine emotions (play requests, fear, indifference, friendly behaviors) were easily recognized by observers regardless of their experience with dogs (Tami & Gallagher, 2009).

The theoretical concept of emotional intelligence in the field of human psychology has been studied by scientists for over thirty years now, as described by researcher Ackley in her review (2016). Individuals’ intrapersonal and interpersonal emotional competencies are of interest in the identification, expression, understanding, regulation, and use of emotions (Baudry & al., 2020; Brasseur & al., 2013). This theoretical field has been little investigated in the context of human-dog relationships and in the field of work carried out by human-dog teams.

Our study aims to explore the relationships and interactions, more specifically, emotions and bonds, within the canine teams conducting olfactory research in the French military.

## **2. Method**

### *2.1 Study Design and Procedure*

Presentation meetings were organized in military units, during which the interview procedures (voluntary participation, anonymity, confidentiality, option to interrupt, and duration) were explained prior to each interview. Interviewed individuals participated based on their availability, interest, and consent. Interviews took place in units between September 2020 and July 2021. The corpus represents a duration of 18 hours and 43 minutes. The average duration of an interview is 1 hour and 9 minutes. The opening question was: "I would like you to talk to me about your work with your dog." The interview guide covered: the profession of dog handlers in the military, the process of olfactory search, missions, training, emotions, and canine profiles. This interview guide underwent a pre-test with 5 participants. The interviews, conducted in French, were fully recorded and transcribed with the participants’ consent, and the names of individuals, places, and dogs were changed to maintain anonymity and confidentiality. The ethics committee of the UFR SPSE of the University Paris Nanterre approved the research project (Approval Number: 2021-04-01).

### *2.2 Participants*

Interviews were conducted with K9 handlers of the French Army (N=16). Participants were informed that the study focused on their daily experiences and work with dogs. Interviews were conducted in person (N=15) and over the phone (N=1). A form filled out by each participant collected sociodemographic information (gender, age, canine experience within the institution).

The sample (N=16) consists of 9 men (56.2%) and 7 women (43.7%) belonging to the following age categories: under 25 years old n=9 (56.2%); 25-35 years old n=5 (31.2%); 36-45 years old n=2 (12.5%). Participants have canine experience within the institution ranging from less than 18 months (n=6; 37.5%) to over 20 years (n=2; 12.5%), distributed as follows: less than 5 years (n=5; 31.2%); 5 to 9 years (n=0); 10 to 14 years (n=2; 12.5%); 15 to 19 years (n=1; 6.2%). Three team

capacities are represented: Support for research and explosive detection: n=3; 18.75%; Assistance with human detection and neutralization: n=11; 68.75%; Dual capacity (explosive detection and individual neutralization): n=2; 12.5%.

The encoding to cite participants in this document is :

- Experience: less than 18 months [- 18 months]; less than 5 years [- 5 years]; from 10 years to over 20 years [+ 10 years]
- Capacities: Assistance in explosives research and detection [ex]; Assistance in human detection and neutralization [Hneut]; Dual capacity: [dual]
- Gender : Man |[M] ; Woman [W].

### 2.3 Data Analysis

Thematic analysis of the qualitative data collected was conducted on the entire corpus following the approach proposed by Bardin (2005). A first descriptive phase was carried out through several careful readings of the corpus. Following this phase, recurrent themes were identified. The qualitative analysis relied on a vertical analysis (by interview) and horizontal analysis (by theme) of the collected data. This approach initially allows for the comparison of individual participants' experiences, then the comparison of documented experiences across different participants. The qualitative approach employed in these interviews doesn't strive for representativeness via a large pool of interviewees. Instead, it prioritizes the specificity of data collection, aiming to comprehensively grasp and analyze the experiences of participants, along with the significance they associate with their activities and their relationship with their dog (Fugard & Potts, 2015). Content analysis was conducted with the assistance of Nvivo12 software (NVivo qualitative data analysis Software; QSR International Pty Ltd. Version 12).

## 3. Results

The results highlight two themes: canine individualities as narrated by their handlers and the relationships within the human-canine dyad. The complete set of themes and sub-themes that emerged during the analysis is described in the Appendix 1.

Table 1. Themes and sub-themes presented in this article

Themes	Sub-themes	Sub-themes	Sub-themes
Canine individualities narrated by their owners	Canine qualities	Talking about one's dog and memorable experiences	When my dog looks at me
Relationships within the human-canine dyad	Canine emotions	Human emotions and fluidity within the human-canine dyad	Bonds, relational modalities, and tensions

### 3.1 Theme: Canine Individualities Narrated by Their Owners

#### 3.1.1 Sub-theme: Canine Qualities

Handlers describe their dogs from two different perspectives: inter-individual and social. They talk about their dog from an inter-individual perspective and describe their dog's professional profile. The specialty, the expectations that result from it, and the highlighting of certain qualities possessed by their canine partner. Qualities or particularities are described based on observations, experiences, and relationships they have with their dog. Handlers also integrate their dog into their social environment by recounting comments, descriptions made by their officers or comrades. The statements made by others support the descriptions they make of their own dog. This way, the dog is socially integrated into the military group. This perspective, which integrates descriptions of their dogs by others, is primarily found among novice handlers. K9 handlers cite qualities associated with different aspects: work (autonomy, motivated, selfless, obedient, physically and mentally enduring, courageous, persevering); temperament traits or general qualities (cool, calm, tranquil, stable, strong character, alert, quick learner, happy, joyful, content, optimistic, good-natured, sociable, solid, overcomes difficulties); relational particularities (funny, playful [with its handler], gaze [at its handler], attentive, loyal, attached), physical specificities (handsome, sparkling eyes, a small head). *"He always has sparkling eyes. Very optimistic."* ENT-20/-5 years-Hneut-M

Descriptions can be in a positive judgment tinged with admiration and affection. *"I didn't know he had all these abilities. He's perfect!"* ENT-15/+10 years-Hneut-W

A professional with over twenty years of experience talks about one of his dogs that particularly stood out to him: *"Marvel, he's a great dog. Marvel, he's a great dog, because he can do everything."* ENT-23/+10 years-ex-M

Only one young professional shows difficulties in finding a quality and articulating what is important for her

dog assigned during her training. During the interview, she describes him based on his incapacities, faults, and the difficulties she encounters in motivating him or performing exercises. She compares him to other dogs demonstrating more successes in training. Like other novices, she did not choose her dog. However, she was the only one to mention her inability to create a bond with him. She indicated several times that she was eagerly awaiting her future dog.

*I have trouble finding qualities[...] ...he is nice. [...] he goes to see everyone, he wants cuddles [...] it's a quality in civilian life, not here. There are dogs that are nice but good at work, he's nice, but he's just nice. ENT-19/-18 months-Hneut-W*

Autonomy and motivation are two qualities frequently highlighted. They seem encouraged and developed. Handlers searching for explosives value autonomy more particularly. Those working in patrols indicate that autonomy must have certain limits or can sometimes be problematic: *"he's fighting his war alone."* ENT-13/-18mois-Hneut-W.

### 3.1.2 Sub-Theme: Talking About One's Dog and Memorable Experiences

Professionals recount situations in which dogs have found the target odor or shown a new aspect of themselves. A valorization of their dog and its work emerges from the stories shared by the handlers. Memories are articulated around the context, country, location, group, and what unfolded around the central character: their dog. They describe with precision the search, attitudes, and behaviors of their dog. In the case of identifications, they have perceived the effects and exchanges with other military personnel (enlisted or officers). The view of their dog changes, the dog is transformed by the event. A handler describes an exercise within an infantry group :

*They're on the edge of the woods. They have to pass in the open, and as soon as they advance, they get shot at. They don't know by whom. They don't know where. They're stuck for an hour and a half. After an hour and a half, a section officer comes. 'Ah, I have a dog, I might use him.' [...] He calls me [...] I went for detection, it took... not even a minute. I found the guy. He was buried in a hole [...] he was camouflaged. [...] Hercule [dog] went, he put his head in the ground and he was there! He caught the guy. After that, the section officer didn't want to let me go. ENT-23/+10 years-ex-M*

This handler extensively describes the memory of the first night of bivouac with her canine partner. The narrative revolves around mutual discovery. Ordinary and simple moments, such as what the dog did during the night or the first looks and greetings exchanged upon waking, marked this professional. *"I still slept with my dog in the field, just that, it was a first [...]. I discovered him and at the same time, he discovered this [bivouac] because I think it's a first for him too."* ENT-21/-5 years-ex-W

The first encounter as well has been recounted as a memorable moment. Professionals describe a sort of love at first sight, a physical detail that charms, an attitude (calm or attention) that appealed to them.

*It was really the first time I saw him. [...] I saw Nalle [dog] with his little head like that... I said 'oh' he looked at me. And then, I don't know... 'wow, he's too cute'. ENT-12/-18 months-Hneut-W*

This professional speaks proudly of the social life experienced by his dog in the Forward Operating Base (FOB). His dog builds privileged relationships with some. He is appreciated by his comrades and valued by the officer. The handler describes his contributions to the group: lightness, affection, sociability, and his status as a mascot.

*He would go see everyone... He would go see the Captain and ask the guys for food. For an hour and a half he would go. The captain, he loved it, he said 'for my men, it's good! Because when they see Hercule [dog], they're happy, they think about something other than being far away, struggling.' [...] and the people he didn't like, he wouldn't go. ENT-23/+10 years-ex-M*

When talking about professional successes or memorable moments, the dog is presented as an actor involved in the action, either alone or alongside its handler. There is a social integration of the dog within the group, as in the military domain.

### 3.1.3 Sub-Theme: When My Dog Looks at Me

It was asked whether dogs looked at their handler during olfactory searches and what these looks meant. Participants consider that dogs look at their handlers in four situations: a) they ask questions or want something; b) they convey information, such as orientation towards an area. They indicate their uncertainty or lack of knowledge; c) dogs make a relational request towards their handler (support, affection, encouragement, confirmation, assistance); d) they express affection, "love" by looking at their handler. Canine gaze are contextualized in an action and in a relationship. They provide information about the dog and the relationship that handlers maintain with them.

*Rezi was barking [at the individual in the cage during training] and when he saw me coming, he stopped barking. He looked at me, he came towards me a bit, and then he went back to the individual, as if to say to me: 'Come, he's here, I found him, come tie me up so I can bite him.' There are many explanations through just*

*a look and a few steps towards me. ENT-14/-5 years-Hneut-M*

In response to the canine looks, handlers address them or respond with words, guidance, orientation, confirmation, or reassurance. For one professional, the looks reflect their strong connection. It allows them to dispense with commands or words to communicate. The exception of this relationship also stands out because it is "this" dog and "this" team. This professional with over twenty years of experience said :

*I didn't need to talk to him. I looked at him, he knew what to do. It was great. [...] When you can achieve that with a dog, it means... We're at the top. ENT-23/+10 years-ex-M*

Canine individualities are described from professional and inter-individual perspectives but also by their social integration. The looks of the dogs express intentional and referential communication, affection, requests for reassurance, or assistance. They sometimes reveal the strong connection that links the two members of the team.

### 3.2 Theme: Relationships Within the Human-Canine Dyad

Handlers working in explosive devices detection observe in their dogs the desire or anticipation to start the search and the pleasure of searching. During training aimed at searching for enemies and practicing bite work, handlers describe their dog's dynamic and demonstrative behaviors, especially with barking. They report their observations of behaviors showing intense emotions related to motivation, desire, pleasure, joy, and anticipation of the reward, which in this case is the bite or pursuit of the person.

*[During bite work] He's the happiest, I don't apply any discipline. For him, it's a game, he's there to have fun. And on the other side, there are the bad guys so he has to go for it. [...] in his head, it's like the fireworks on July 14th [French National Day]. ENT-13/-18 months-Hneut-W*

Handlers report that they rely on bite work to develop aspects of the dog: its confidence, assurance, and motivation to conduct a search. Bite work is sometimes mentioned to address a need to externalize controlled aggression. One handler compares bite work for his dog and his personal need to also train on a punching bag. "If he is a dog who is a bit weak, it can also do him good because it can also strengthen him a bit." ENT-22/-5 years-ex-M

Pleasure is an emotion frequently cited, associated with olfactory searches and bite work. Engaging in the activity, anticipation, and the moment of reward are described as moments of pleasure. Several novice handlers have specified that their dog does not experience the same pleasure during obedience training sessions.

*To make him happy, to make me happy. He knows that if he performs a certain behavior, it will make me happy. And behind that, he will feel pleasure because he will be rewarded. ENT-13/-18 months-Hneut-W*

Professionals identify the expression of positive emotions during the three phases of the activity: before starting, during, and at the moment of reward. They notice intense motivation, pleasure, joy, and anticipation of the reward. The activities primarily triggering these positive emotions are mainly olfactory activities and bite work. For some, bite work helps to reinforce confidence and assurance or to externalize controlled aggression.

#### 3.2.1 Sub-Theme: Human Emotions and Fluidity Within the Dyad

According to professionals, their emotions associated with anger (irritation, frustration, dissatisfaction) arise when the dog does not exhibit the expected behavior (lack of concentration, deviation from the trajectory, failure to return the ball on the "drop it" command). They also occur during preparation and examination periods. Novice handlers mentioned their tension and stress experienced during the assessments, officers also described this situation observed among the novice ones. These emotions are also felt when undesirable behavior occurs during training, such as scratching on the target odor when they search explosive devices. Handlers say they undergo their emotions in these moments. Furthermore, several professionals believe that their emotions and stress negatively affect their dog, its behaviors, and its work: "The more I'm annoyed, the less he listens." ENT-19/-18 months-Hneut-W

According to these professionals, their dogs observe them, perceive their negative emotions or stress, and are disturbed by them: "When I can't do something, I stress. There, Komi unintentionally saw that I was stressed. He took on my stress and he behaved erratically." ENT-18/-18 months-Hneut-M

To try to limit this impact, they implement strategies. One of them says: "do everything to not show it but... He knows you." ENT-14/-5 years-Hneut-M

They try to hide, shift, or separate the emotion or stress, but professionals say that these attempts work more or less effectively.

*When I fail with him, when it's not good, I know it quickly rises, it annoys me. I breathe, I exhale. [...] I tell myself, 'it's okay, let's start again.' But it's not easy. ENT-21/-5 years-ex-W*

Handlers modulate the negative emotional contagion effect especially during olfactory searches and individual

neutralization. They describe that from the beginning of the search, the handler's negative emotions no longer or much less disturb the dog because it is motivated and focused on its task. Handlers working in search and neutralization were not questioned about the potential interest of the handler's tension on the dog's work, and they did not spontaneously address it. Examination situations were mentioned repeatedly by novice handlers and by an experienced handler as contexts of negative emotional contagion within the dyad. And it impacts the dog's work. Handlers indicated that in situations of irritation or stress, they can become unpleasant towards their dog. Thus, exams are described, by some, as a source of negative emotional contagion and as a stressful situation for handlers triggering behaviors, gestures, and expectations having deleterious consequences on relationships and interactions with dogs. *"Komi started freaking out. It bothers me because then I get angry with him and that, I don't want."* ENT-18/-18 months-Hneut-M

Professionals mention the use of emotions as a means of communication to convey information to their dog. "What you're doing is good" is expressed with joy; "what you're doing is not good" provokes irritation. These are simulated emotions, thus controlled by the handler in their intensity, duration, and timing of occurrence. They describe shifting from irritation to pleasure as soon as the dog modifies its behavior to respond to the request. *"It's like a play. You have to know how to switch from one emotion to another, with a dog, and very quickly."* ENT-13/-18 months-Hneut-W

Handlers emphasize the observation of different emotions in their dogs. Handlers attempt to regulate their negative emotions (to varying degrees of success) to avoid disturbing their dog or being unpleasant with them. However, during olfactory search or bite work, emotions no longer seem to affect the majority of dogs. They remain motivated and focused on their task.

### 3.2.2 Sub-Theme: Bonds, Relational Modalities, and Tensions

Handlers state that bonds are built and maintained outside of learning and operational implementation times. They consider that simple daily activities contribute to living moments together and getting to know each other. The time spent together on missions strengthens the bonds, according to the handlers. During missions, shared time is more important and goes beyond the usual unit framework. Novice and experienced handlers have listed different types of moments contributing to building, maintaining, and strengthening bonds outside of training and operational deployments:

-Activities: various playful interactions, grooming, walking, running and swimming together;

-Moments of support, affection, or presence: reassuring, petting, comforting, talking, simply being together without doing anything.

Experienced handlers have emphasized the building of these bonds during informal moments, especially outside of training or operational deployments.

*During training sessions, you give him orders. 'You have to do this,' so that's not where the bond is created. The bond is created when we go for walks. When we lie down on the ground. [...] it's in those moments that the bond is created. [...] during exercises, it's a continuation of that bond.* ENT-23/+10 years-ex-M

Professionals consider their dog as a close one (a friend, buddy, companion, son, teammate, comrade, or partner). A novice says: *"In the morning, we get up, we know we are awaited by our dog. And that, it's just happiness. We come for someone."* ENT-17/-18 months-Hneut-W

*I call him my buddy [...] he's more of a friend than a work colleague. It's not a relationship imposed by the state. [...] For me, it's important to have this bond with my dog.* ENT-25/+10 years-dual-M

Some speak of feelings of love, tenderness, and admiration towards their dog.

*When we go on deployment [...] I have my partner with me. My morale is boosted because he brings me affection. A regular military personal, it's not his weapon that will bring him love.* ENT-17/-18 months-Hneut-W

Only one novice expressed her lack of bond to her dog. She says she "doesn't love him." It's the difficulties she encountered with her dog, his inability to progress, and the comparison with other novices' dogs that affect her relationship with him. *"Normally I get attached to dogs quite quickly. But here, I don't have this problem because he's crap. It annoys me."* ENT-19/-18 months-Hneut-W

The necessity of knowing one's canine partner well was mentioned by several experienced handlers. Some explained that this knowledge is necessary for reasons of safety and reliability. For others, a very good knowledge of their canine partner is associated with their relational proximity and trust. Handlers added that dogs know them very well, sometimes even better than they know themselves

*You have to know your dog inside out. I know him inside out. I can tell you when he's about to go out, I can tell you if he's going to pee or if he's going to poop. And at the moment he's going to do it. I can tell you everything*

*about my dog, ENT-25/+10 years-dual-M*

Bonds, affection, and knowledge appear intertwined and characterize relationships within K9 teams. However, professionals also mention the occurrence of tensions and conflicts with their canine partners. They arise in four types of situations: a) team evaluations such as exams. They describe the preparation period or during the exam as conducive to tensions within the K9 team; b) when the dog does not release the reward object at the verbal signal of the handler; c) if the dog knows the behavior and does not produce it; d) during aggressions sometimes leading to bites causing injuries. *"He was my dog. But he didn't give it back to me very well. Every three days, he wanted to beat me up."* ENT-23/+10 years-ex-M

Professionals have talked about conflictual relationships and training practices of some of their colleagues. They emphasize that they differ from them by issuing negative judgments regarding their way of being with their dog. They also describe how their practices are different. They explain the reasons why they do not practice in the same way. They illustrated by examples the way they prefer to interact. This concerns the occasional use of coercive tools as well as conflictual gestures and relationships. Some participants insist on the need to maintain a relationship not based on conflicts.

*Already, he's fearful, if he gets upset, and if I don't have a dog anymore...If after two months that I have him, I break him... [...] I couldn't look at myself in a mirror by hitting a dog. ENT-16/-18 months-Hneut-W*

Considering the consequences of using pain and intense fear on dogs, for the novice handlers, also seems to result from experienced instructors. Some specified that they also did not like this type of interaction at all, that they did not adhere to it. During training, they prefer to aim for the increase in the occurrence of a behavior by rewarding it. And developing the motivation to produce a behavior. According to them, this allows for a motivated dog, in a state of pleasure emotion. And he is quickly available to continue the activity. When the dog in training does not produce the requested behavior, experienced handlers specify that it is information to assess what has been learned. It also informs about what remains to be acquired, generalizations of contexts to be made, environmental stimuli that will need to become common. *"You have to teach him everything. If he doesn't know, you shouldn't hit him or anything. You have to teach him."* ENT-18/-18 months-Hneut-M

Some specify that sanctions are used sparingly, thoughtfully as information for the dog, marking an error when the behavior is acquired. The sanction aims to readjust the behavior. Handlers always consider the restitution of learning from the operational purpose. They describe the dangers that dogs and humans face in case of inappropriate behaviors on missions. This implies finalization and reliability of the training.

Some professionals specify that it's necessary to establish clear rules and limits while avoiding the use of coercion and conflict. Several handlers have added that a dog must respect boundaries and have used the expression: "left limit, right limit." An experienced handler distinguishes authority from authoritarianism. He speaks of the authority of a family father. It is based on a strong emotional relationship between the handler and his dog. Its purpose is to nurture growth. He says:

*The leader is there to teach everyone. The head of the family, the father, is not there to use the belt. I think that's what also strengthens the bond... When you teach things to people, I think they love you much more.* ENT-24/+10 years-Hneut-M

It appears that simple and informal daily activities and missions strengthen the bonds between handlers and dogs. However, certain situations can trigger tensions and conflicts within some K9 teams.

#### **4. Discussion**

The study explores the relationships and interactions within the canine teams performing olfactory research in the French Army. The study conducted sheds light on canine qualities, the meanings attributed to canine gazes, significant experiences lived with one's dog, as well as human and canine emotions and their fluidity within the team. The research also provided insights into the bonds, relational modalities, and tensions within military K9 dyads.

Canine handlers identify various emotions in the workplace, aligning with Konok and her colleagues (2015) findings on people's attribution of emotions to dogs. Olfactory research activities (explosives or persons) and biting trigger positive emotions described as joy, pleasure, enthusiasm. They are also associated with motivation. Moments where positive emotion is observed include: the anticipation phase of practice, during, and at the time of reward. Moments of affection are also described as a source of pleasure for both dogs and handlers. Professionals have mentioned the circulation of these positive emotions within the pair. They describe that the desire to please their handler and the pleasure expressed by the latter are enjoyable for the dog. Being praised, rewarded, and valued for tasks performed triggers these positive emotions. The contagion of negative emotions and stress arises notably during evaluations when young handlers want to do well, and the dog does not produce the behavior previously learned. Difficult training sessions also elicit this type of

emotion in handlers. Some handlers indicated that they sometimes didn't like it when they interacted unpleasantly with their dog in tense situations. They observe confusion, agitation, difficulties in reproducing learned and mastered behaviors in their animal. They especially note the impact of their negative emotions (irritation, anger, worry) and stress on their animal. In these situations, negative emotions expressed by dogs seem to occur in reaction to behaviors, intonations, and negative emotions expressed by their handler. In this case, it would be less about emotional contagion and fluidity than about responses and adaptation to behaviors and signals from handlers expressing irritation or tension. Results mentioning emotional fluidity and dogs' reaction to handlers' negative emotions confirm previous studies indicating dogs' abilities to recognize human emotions and perceive their valence (Merola & al., 2014; Albuquerque & al., 2016; D'Aniello & al., 2018; Katayama & al., 2019). However, it appears that dogs sensitive to their handler's emotions are not so in olfactory research and bite work. Dogs remain motivated, focused, and concentrated on the task at hand. So handlers described an absence of observable effects of their emotions on their dog during the task. This finding contrasts with the results of a previous study (Zudebat & al., 2014), for whom dogs were more successful in detection when handlers were under stress. Even though in the case of the interviewees, there was no question of an improvement in their performance but of stability. The fluidity of negative emotions within the pair, during the search and neutralization of enemies, was not questioned by the interviewer, nor mentioned by the participants during the interviews. While this aspect could be an asset during the tracking of an individual.

The results also reveal the use of emotions in working with dogs. It appears that handlers use intonations with simulated emotions to convey information to the dog about the behaviors it produces, does not produce, or does not correctly produce. The study reveals the ability of dogs or the willingness of handlers to regulate their emotions and use them in the workplace. It appears that regulating negative emotions and stress felt by handlers can sometimes be difficult for some individuals in particular moments such as preparation of exams. K9 handlers also described for example the use of bitework or words of encouragement, as a way to support and manage emotions of their dogs. This involves assisting their dog when facing difficulties, reducing their fear or doubts, or helping them gain confidence. This phenomenon of relying on one's emotional skills to help an individual in a human context (Austin & al., 2018). This use of emotions for prosocial purposes could help strengthen the bond within the dyad, help the dog express its potential, and represent a pathway aiming at improving performance. Our results highlights the identification of handlers' emotions, their expression and use, their more or less successful regulation, as well as the identification of canine emotions. The results underline the interest represented by handlers' intrapersonal and interpersonal emotional skills in the context of interactions in the workplace. In connection with previous studies conducted in the field of human emotional skills, the identification, expression, comprehension, regulation, and utilization of emotions are processes described by the handlers (Baudry & al., 2020; Brasseur & al., 2013).

Professionals avoid or refuse to rely on the use of tools or a relational mode based on conflicts. The reasons given concern the potential consequences on the dog, at the emotional level. The impact on the professional and technical sphere, on the handler-dog relationships, is one of the reasons that lead them to avoid coercion and conflicts. Handlers do not want such professional or relational consequences for their dog. The emotions of pleasure and joy exhibited by dogs in work situations are valued and appreciated by handlers. There is a priority to primarily build and develop their dog, but also their relationship. On the other hand, authority, obedience, and discipline have been emphasized and considered necessary both in preparation and during operational implementation. They help reduce uncertainty in the field. Intervention conditions in intense and degraded situations require considering the safety of the military group and the canine team during mission execution (Guillaume, 2023). The tasks to be carried out require following strict procedures to avoid exposing to risks of injury or death. The perception and use of authority in the military differ from the civilian environment (French Army, 2016). In this context, it is exercised within the framework of command. It is related to military and operational necessity, decision-making in conflict and hostility situations. In a group and during operational situation, order and organization are necessary. Furthermore, virtues and abilities characterize those who command and exercise their authority. Some are part of a relational dynamic involving recognition, subordinate trust (Siebold, 2007), and the presence of affectionate bonds ("obeying out of friendship"). In a military context, authority is defined and exercised with the aim of increasing, developing, and growing. Some participants clearly situated their objectives in this approach aimed at advancing their dog. They position themselves in an educational role as head of the family, which also involves affection and bonds. Handlers also rely on the dogs' learning abilities, on planning the learning steps, splitting and sequencing the learning, as well as on the use of positive reinforcement. Establishing mutual trust and strong bonds are also important foundations for them.

The thematic analysis of the interviews underline the importance of the bonds with their canine partners. The quality and strength of these bonds have repercussions in the work, as well as in the relationship between the handler and the dog. Some consider that these bonds are primarily built outside of training sessions and missions. Bonds are woven and strengthened during simple and ordinary moments, through the quality of being together and the time spent together.



The results emphasize the variety of meanings attributed to the gazes of dogs during olfactory searches as well as outside of them. Professionals describe four main situations where dogs appear to gaze at their humans: asking questions, conveying information, expressing relational demands, or showing affection. Attributing these meanings to canine gazes implies attributing mental states, the ability to communicate intentionally and referentially (Worsley & al., 2018; Pérez Fraga & al., 2023; Hirschi & al., 2022). During this referential communication, dogs convey specific information during olfactory tasks, such as pointing to an area or indicating a direction.

Finally, considering these results, the human-dog relationships specific to olfactory searches in the military context could be articulated around the following dimensions: bonds, emotions, affection, trust, communication, care, mutual support, technical learning, cooperation, interdependence, and instrumental. The relationships established in this context can be envisioned as multifaceted.

#### 4.1 Limits

One limitation concerns the canine perspective, which was approached solely through the handlers' prism. Even though the K9 handlers consider them as co-actors and partners, dog's perspective has not been questioned (Sanders, 2006). One methodological limitation arises from the lack of information on the participants' ranks. In a hierarchical institution, where the shaping of military personnel is primarily vertical before being horizontal, rank represents potentially useful information in the analysis.

### 5. Perspectives

This study highlights the need to further research on emotions within an interspecies partnership in a military context. The intrapersonal and interpersonal emotional skills, involving the exploration of identification, expression, understanding, regulation, and utilization of emotions by handlers, need to be further explored. Similarly, on the side of working dogs in the military, identifying and understanding the emotions of their human partners, as well as regulating their own emotions, also represent an area for investigation. Identifying the specific emotional skills of handlers associated with the military context, but also considering the possibility of developing them, could positively impact the performance of canine teams. These understandings and practices could also positively influence the experiences and well-being of the dogs.

Several aspects of this study hold practical significance for both the military and canine teams. Providing more informal experiences for canine teams, particularly those still in formation, outside of formal training could promote the development of stronger, more intimate bonds before deployment on overseas operations. These experiences could take place during bivouacs, during breaks when handlers and dogs are alone, through activities such as swimming or engaging in other water sports, during different types of play than those used in training, or through cooperative care exercises (medical training).

From an operational standpoint, military personnel are likely to intervene in tense conditions and environments that vary in terms of deterioration. This context equally applies to the dogs. Moreover, the risks of injury and fatality are inherent to this profession. Developing and strengthening the emotional skills of dog handlers—especially their ability to regulate emotions in stressful or tense situations—could enhance their ability to manage these challenges and address degraded and/or tense intervention situations. Additionally, this could help prevent negative emotional contagion, which might otherwise disrupt the cognitive and emotional functioning of their dogs. More concretely, the dogs would handle these moments more effectively, and their performance would be less impacted by their handler's emotional state. For some teams, by regulating their emotions, the handler could act as a stable emotional anchor, potentially supporting dogs that are sensitive to certain emotions. Emotional skill development is valuable not only during the team's formation but throughout their entire career.

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