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Preliminary study on the psychophysical stress of dogs in law enforcement dog units during off-duty period

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Abstract: The level of stress in Law Enforcement Dogs during work has already been the subject of several publications. The purpose of this study was to determine if and how the signs of stress occurred during the period of inactivity, i.e., during periods without work and after retirement. Several interesting aspects emerged from the questionnaires submitted to the conductors of the Dog Units, including the presence of slight /modest entity behavioural abnormalities and the underestimation of an adequate relationship of collaboration between some of the institutions interviewed and the professional figure of the veterinary surgeon expert in behavioural medicine.

Key Words: police dog; working dog; dog units; animal welfare; stress; behavioral medicine.

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Introduction

The "Dog Unit" understood as a human-dog binomial, was born in Italy for the first time in Turin in 1939. It was a division in the Fire Department specialized in the search for people missing under the rubble, established in view of the impending war period, and their contribution to identify people after bombings was crucial. Today as then, the "Dog Units" of the armed forces guarantee the safety of thousands of people every day. Together with their handlers, the work of dogs ranges from anti-explosive control, public order, up to the aforementioned search for missing persons, often at risk of their own life, undergoing incredible levels of stress and demonstrating an extraordinary self-control. Many scientific studies have been carried out to assess stress levels and response to stimuli in animals during work, but how do these dogs react to inactivity, being trained to be constantly alert? What are the signs that the handler can immediately identify as indicators of uneasiness, in order to contact a veterinary doctor experienced in behavior? The purpose of this study is precisely to understand how dogs trained to be always ready and vigilant, react to inactivity, evaluating, through a questionnaire for the operators of the dog units concerned, their level of stress both during the working process (considering as "inactive" the period from the return to home/ barracks after a mission until the next mission), and after retirement. It is considered a preliminary study, as the behavioral patterns manifested by the individual to cope with stressful events, reduce the physiological response to stress and therefore measuring only the latter would not give back a true clinical picture of the subject. Similarly, an animal that is behaviorally inactive, that is, unable to cope with a stressor through behavior, could otherwise be severely stressed (Duncan and Filshie, 1979), but in this case the owner / handler would not be able to notice it. Therefore, the possibility of a further study is proposed that also takes into consideration the evaluation of physiological parameters (in particular cortisol levels), in order to have complete clinical results.

Brief overview on well-being & stress

Animal welfare can be defined as "the state of complete physical and mental health that allows the animal to live in harmony with its environment" (WHO/Hughes, 1976). To ensure this, at least

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the essential needs identified in the "Five Freedoms" contained in the 1965 Brambell Report must be met. When equilibrium is threatened by external factors, stress is, in medical language, the functional response through which the body reacts to a more or less violent stimulus (stressor) of any nature (microbial, toxic, traumatic, thermal, emotional, etc.) (Treccani, 2021). Research suggests that behavioral indicators of stress are anything but simple to assess and how they can vary from individual to individual, so there is no definitive list of signs of stress (Rooney et al., 2009).

Generally, stress-related behaviors overlap with those associated with fear, anxiety, pacification, and conflict. They can look like behaviors associated with flight, freezing, or even fighting. Oral behaviors could include snout / lips licking, yawning, and panting. Dogs can avoid eye contact or look away. Tremor and body shaking are often indicators of high psychological stress and could be accompanied by a lowered body posture, or a curled-up posture as the dog tries to hide (Rooney et al., 2009). Dogs raise their paws in both asocial and social contexts, when they are alone and distressed, and also during social conflicts (inter or intraspecific), when confused or in fear (e.g., of punishment) (Schilder & van der Borg, 2004; Rooney et al., 2009). Periods of continuous barking, whining and howling suggest frustration or distress (Rooney et al., 2009).

Displacement behaviors are also important to attend to as they constitute normal behaviors performed in an "inappropriate" context (Falk, 1977). Displacement behaviors are often associated with motivational conflicts or frustration and may cross paths with stress-related behaviors. Veterinarians mention the lack of urination or defecation, or even dry mouth, as associated with stress, and one study even described "a characteristic breath smell" in dogs in distress (Mills et al., 2006). At the same time, dogs suffering from stress may exhibit the most diverse attitudes, from introverted and inactive to very active (Hiby et al., 2006). Sociability could be another indicator because dogs that are more sociable with humans have lower cortisolo levels than those described as less sociable (De Palma et al., 2005). As a whole, inactive dogs showing obvious or subtle social avoidance should also be considered as potentially subject to higher levels of stress (Weiss et al., 2015).

Being widely present in human society, dogs, unlike other domestic animal species, are exposed to enormous stimulus loads of high stress, especially those of a psychological and social nature (Chmelíková et al., 2020). These loads include absence of owners, loud noises, social interactions, physical exercise, exposure to novelty or excessive expectations of the handler (Beerda et al., 1998; Pastore et al., 2011; Hennessy et al., 2013). Achieving the goal of identifying and reducing these loads requires measuring and quantifying the level of stress. The ability of the owner / handler to recognize the behavioral signs of stress is important, as it allows them to help the animal and avoid stressful situations, and promotes a rapid recovery of psychophysical homeostasis by interrupting the progression towards overload and discomfort (Mariti et al., 2012). The more time people spend observing their dogs and the more different the contexts in which such observations occur, the more accurate the assessment of their well-being will be (Rooney et al., 2009). However, even for people living with dogs, the most subtle behaviors are not easy to recognize (Tami & Gallagher 2009; Mariti et al.2012).

Another big challenge in dealing with stress is the intense variation in the perception of stressors, as people living in families with more dogs may know. One dog may find loud noises terrifying, while another lies down on the sofa during fireworks. From an early age, dogs appear to exhibit individually distinct coping strategies (Riemer et al. 2013), "characterized by consistent behavioral and neuroendocrine characteristics" (Koolhaas et al. 1999). Coping strategies are often described as "proactive" and "reactive", the former characterized by bold exploration and fight or flight in response to stressors, while reactive individuals tend to freeze when they encounter aversion. Individual monitoring and attention to individual coping strategies are useful for detecting a stress response of dogs and noticing any changes in their behavior (Rooney et al. 2009).

As an alternative (or, better, in association) to behavioral parameters, stress response can be measured by physiological parameters, with the evaluation of cortisol levels, which in dogs can be isolated from blood plasma (Beerda et al., 1996; Steiss et al., 2007), faeces (Accorsi et al., 2008; Palme

et al., 2019), urine (Beerda et al., 1996; Rooney et al., 2007), hair (Bennet et al., 2010 ; Bryan et al., 2013) and saliva (Beerda et al., 1998; Drescheland Granger, 2005; Jones and Josephs, 2006; Vincent and Michell, 1992; Horváth et al., 2008; Dreschel et al., 2009), or by the ACTH stimulation test. Further assessments could be direct control of blood pressure, heart rate and respiratory rate, but these responses are not specific to stress, as they can also increase with exercise (Casey, 2004). Physiological indicators of stress response in individuals have the advantage of providing quantitative measurements, that is, a value is obtained that can be compared with values obtained under different conditions or from other individuals. However, not only is there a huge individual variation in physiological response to stressors, but there are also physiological variations due to the different times of the day that can make comparison and interpretation of results difficult (Rushen, 1991).

Furthermore, there are often problems in measuring physiological parameters, as animals should be accustomed to blood sampling or other measurement techniques, to make sure that these same processes do not cause changes in the stress response (Mason and Mendl, 1993).

In conclusion, stress levels can be measured using both physiological and behavioral parameters: the simultaneous use of both is considered a more reliable indicator of the stress level or the degree of wellbeing of the subject (Mason and Mendl, 1993).

Materials and methods

For behavioural measurements, questionnaires have been used, potentially having a wide applicability in measuring stress levels in dogs, because owners know the behavior and personality of their dogs better than anyone else and can provide useful information through understanding displayed behaviors (Mariti et al., 2012).

For a better homogeneity and possibility of comparison of the results, 4 types of multiple-choice questionnaires (min. 25 max. 28 questions, for a total of min. 4 max.5 pages) have been drawn up, structured as follows: - a general section, the same for all, to frame the desired characteristics in this type of working dogs, the type of training of dogs and the type of preparation of the handler; - a special section, with questions relating to the single Armed Forces and the type of specialization of dogs, taking into account the differences (e.g. sniffer dogs are part of the core of the Border Police, but not of the Fire Department, where there are, instead, search units for missing persons, absent in the Air Force).

It was expressly stated that more than one answer could be given to each question, marginal notes could be inserted and there were no correct answers. The above questionnaires have been sent by Certified Mail, placing them for the attention of: 1. Comando Generale dell'Arma dei Carabinieri - Rome (questionnaire authorized by the same Comando and filled in by the Dog Unit of Comando di Nicolosi (CT) on the instruction of General De Liso, Head of Office OAIO of Comando Legione Carabinieri "Sicilia"); 2. Polizia di Stato – State Police, Border Police of Catania Airport (questionnaire authorized by the Central Management and completed by the Head of the Anti-explosive Dog Team of Catania Border Police Office); Comando Provinciale dei Vigili del Fuoco di Catania - Provincial Command of the Catania Fire Department (questionnaire authorized with protocol number 10457, 05/05/2021, and completed by dog handlers in service at the Regional Fire Department for Sicily); Canine Center of the Air Force of Grosseto (questionnaire authorized and filled in by the Canine Unit Managers of the same Center).

Results

There is a uniformity of answers as regards the breeds most often used and the type of training with the exception, in part, for the Carabinieri. In all cases, in fact, dogs are trained by the future

handler or by other handlers experienced in training and learn by playing. In no case mixed breed are used. All start training over 6 months (usually around the year of age), while entering service before 2 years of age in the case of State Police and Air Force (in the case of Firefighters and Carabinieri there is no specific age) (Table 1 and Table 3). All interviewed conductors claim to have animal behaviour training thanks to the attendance of courses organized by their own institutions, but answers diverge to the next question "Are the courses also taught by veterinarians with experience in behavior?" (Table 2): "No" for the Carabinieri, "meetings with behaviouralists are organised" in the case of the State Police, "Yes" for the Firefighters and "Other" for the the Air Force. There is also a little difference between military and non-military forces, as regards the use of male and female dogs (Table 4): if the State Police and Fire Brigade use both indifferently, the Carabinieri and the Air Force preferably use males, which are never neutered (Table 6), while females are almost always neutered (Table 5). Police, Fire Brigade and Air Force allow the dog to return home with the handler (Table 7), while in the case of the Carabinieri it is not possible due to regulatory provisions and the animal must "unwillingly accept to remain in the box" (Table 8 and Table 9). In all cases, when they return to the housing facility, dogs are properly housed in a single box and are often entertained. The dog's attitude upon returning from work finds differences again between military and non-military forces: if the Police and Fire Brigade declare that their dogs are "tired, eat and go to rest", in the case of the Carabinieri and the Air Force the answer is "the dog is still active and would like to continue playing" (Table 10). Regarding the question about stress signals (Table 11) the listed behaviors were: "licking, scratching, nibbling the tail or limbs, being hectic, reacting to all stimuli, yawning, carrying out inappropriate eliminations (urine, faeces, vomiting), showing excessive reactions to certain stimuli (e.g. bangs, flashing lights, noises), refusing water and / or food, being beaten down, showing unusual attitudes of another nature, other. Those most reported were "licking" and "scratching" (Firefighters and Air Force), followed by "yawning" (Air Force). In the case of the State Police the full answer was: "it may happen that some of the above listed behaviors arise in the first period of assignment to the Dog Unit, due to environmental change, but with time and attentions of the conductor certain behaviors are not displayed." In any case, it is declared that these behaviors are sporadic (Fire Brigade and Military Air Force) or vanish with time and the attentions of the handler (State Police) (Table 12). To the question "Has it ever happened that the dog had small wounds, small red or hairless areas NOT attributable to work missions?", with the exception of the Fire Brigade, the prevailing answer was positive. In the next question it was asked whether these attitudes (Table 11) and small injuries had ever occurred in conjunction with the absence of the handler (Table 13): the answer was negative in the case of the Fire Brigade and Arma dei Carabinieri, positive (but only in case of prolonged absence) in the case of Police and Air Force. The average life expectancy in almost all cases goes over 10 years (Fire Department over 9 years). In all cases the dogs retire based on their psycho-physical conditions usually from 9 years old, as well as in all cases it is provided that the handler can keep their dog with them after retirement. In the case of Carabinieri, Police and Air Force adoption is also allowed, in the case of Police and Carabinieri the possibility of assignment to associations is also provided (Table 14). The last questions were closely related to the type of specialization of dogs in each law enforcement agency. For ease of visualization and understanding, Question 23 (Table 15) brings together the questions that have actually been asked individually for all dog specializations of the single organizations. The Arma dei Carabinieri reports "kennel stress" in all cases: anti-drug dogs, rescue and search for missing persons dogs and public order dogs. Completely absent, however, any type of disorder in police dogs: anti-drug, anti- explosive, prevention, protection, public order and judicial police, search and public rescue dogs. Molecular dogs for COVID-19 (Grandjean et al., 2020) at the airport are not used yet at the headquarters of the Institution interviewed (Border Police Catania - Fontanarossa Airport "Vincenzo Bellini). The Air Force reports "hyperreactivity to precise stimuli" in mission dogs. In the final question, with the exception of the Italian Air Force that reports "depression" in their dogs, none of the other bodies reports pathologies or disorders after retirement (Table 16).

Table 1. Dog training. Note: CC is alias Carabinieri; VV.F. is alias Fire Department

Question 2. What age do they start the training at?				
	CC	Police	VV.F	Air Force
Before 90 days of life				
About 90 days old				
About 6 months	X		X	
Over 6 months	X			
Other				X

Table 2. Handler animal-behaviour training

Question 5. Are the courses also taught by veterinarians with experience in behavior? (in case of affirmative answer to the previous question)				
	CC	Police	VV.F	A.F.
Yes, there is always a veterinarian with experience in behavior			X	
No, a general practitioner veterinarian is sufficient	X	X (meetings with behaviouralists are organised)		X
There is no veterinary doctor present				
Other				

Table 3. Age of commissioning

Question 6. What age are dogs brought into service at?				
	CC	Police	VV.F	Air Force
< 6 months				
< 1 year				
< 2 years		X		X
There is no specific age	X		X	
Other				

Table 4. Dogs: male or female?

Question 7. Dogs used:				
	CC	Police	VV.F	Air Force
Males				
Females				
Both of them indifferently		X	X	
Both, but preferably males	X			X
Both, but preferably females				

Table 5. Female dogs

Question 8. Are female dogs routinely sterilized?				
	CC	Police	VV.F	Air Force
No				X
Yes		X		
Yes, but just in case of proven need for dog health	X		X	
Other				

Table 6. Male dogs

Question 9. Are male dogs routinely neutered?				
	CC	Police	VV.F	Air Force
No	X	X		X
Yes				
Yes, but just in case of proven need for dog health			X	
Other				

Table 7. Post mission

Question 11. After a work mission the dog:				
	CC	Police	VV.F	Air Force
Back to base	X	X (Dog Unit kennel)		X
Back home with the handler			X	X
Other				

Table 8. At the base

Question 13. In the event that the dog is returned to the base:				
	CC	Police	VV.F	A.F.
It remains calm and indifferent to the fact that the conductor goes away	X		-	X
It tries to attract the attention of the handler with games and cuddles			-	X
It retreats to its kennel and no longer moves			-	
It goes playing with the other dogs			-	
Other	The dog unwillingly accepts to remain in the box	First it goes to the recreation area and then to the kennel	-	

Table 9. Return to the handler's home

Question 14. Why does the dog not return to the handler's home?				
	CC	Police	VV.F	Air Force
Working hours that do not allow the handler to establish a home routine			-	
Security reasons			-	X
To prevent the dog from getting too attached			-	
Other	X (regulatory provisions)	On request it can return home	-	X

Table 10. Dog behavior post work (1)

Question 15. How does the dog behave after returning from work?				
	CC	Police	VV.F	Air Force
It is still active and would like to continue playing	X			X
It is tired, eats and goes to rest		X	X	
Other				

Table 11. Dog behavior post work (2)

Question 16. Has the handler ever noticed one or more of the following dog behaviors upon returning from work?				
	CC	Police	VV.F	A.F.
Licking			X	X
Scratching			X	X
Nibbling the tail or limbs				
being hectic				
Reacting to all stimuli				
Yawning				X
Carrying out inappropriate eliminations (urine, faeces, vomit)				
Showing excessive reactions to certain stimuli (e.g. bangs, flashing lights, noises)				
Refusing water and / or food				
Being beaten down				
Showing unusual attitudes of another nature				
Other	X	In the first assignment period some of those listed may occur		

Table 12. Dog behavior post work (3)

Question 17. Are the reported attitudes sporadic or repetitive?				
	CC	Police	VV.F	A.F.
Sporadic	-		X	
Repetitive	-			
I don't know, I've never noticed	-	With time and attentions of the conductor certain behaviors do not manifest		

Table 13. Absence of handler

Question 19. Has it ever happened that a dog assumed any of the attitudes listed above during the absence of its handler?				
	CC	Police	VV.F	A. Force
yes, but only in case of prolonged absence		X		X
yes, always in case of absence				
Sometimes				
No	X		X	

Table 14. Dog retires

Question 22. What happens when the dog retires?				
	CC	Police	VV.F	Air Force
The dog handler holds the dog with them	X	X	X	X
The dog is entrusted to associations	X	X		
The adoption of the dog by private citizens is allowed	X	X		X
They are used for other things, for example pet-therapy		X		
Other		X (the dog's handler has the right of first refusal)		

Table 15. Diseases in the working period

Question 23. Most frequent diseases in this type of dogs in the working period:				
	CC	Police	VV.F	A.F.
Depression				
Post-traumatic stress disorder				
Anxiety, phobias				
Hyper-reactivity to precise stimuli				X (mission dogs)
Other	Kennel stress (all types of dogs)	None (all types of dogs)	None (rescue dogs)	

Table 16. Diseases in this type of dogs in retirement

Question 24. Most common diseases in this type of dogs in retirement:				
	CC	Police	VV.F	Air Force
Depression				X
Post-traumatic stress disorder				
Anxiety, phobias				
Hyper-reactivity to precise stimuli				
Other	None	None	None	

Discussion

The general questions asked mainly in the first part of the questionnaires were fundamental to lay the foundations for understanding the behavior of this type of dogs in adulthood and in service. As already mentioned, in fact, all behaviors and attitudes must be contextualized. What emerges is that the young ones, both male and female, are usually left whole by all the organizations interviewed: in this regard, a study by Fattah and Abdel-Hamid (2020) shows a wide variation in performance, associated with sex, neutral state and dog training method (Toya et al., 2017). It seems that unneutered male dogs perform their duties better than sterilized male dogs, which after sterilization showed more anxious behavior than the others. According to Lorenz et al. (2018) castrated trained dogs are less confident and much more anxious than uncastrated trained dogs when in contact with other trained dogs, and more anxious towards whole trained females. Differently, a study by De Greeff et al. (2020) shows that the performance of police dogs differs on an individual basis.

From the questionnaires it is also noted that the dogs of the Law Enforcement are trained to perceive their work mainly as a game and in no case coercive methods are used. This is very important for a correct growth, because there is no fear to make mistakes and receive a punishment, which will also positively affect the dog-human relationship (Wilsson et al., 1997; Lazarowski et al., 2018; Hall et al., 2021). The punishment, in fact, is not only painful, but also causes behavioral problems (Farhoody et al., 2010; Kaufmann et al., 2017).

It can also severely affect performance by affecting problem-solving behaviors, increasing pain and suffering, causing emotional instability, provoking symptoms of depression, aggression, unwanted barking and growling at other people (Mesloh, 2006; Horn et al., 2013; Marshall et al., 2008; Range et al., 2009). Dogs with playful and rewarded training are more willing to perform a new task, are successful in solving problems, show minimal unwanted behaviors (Fattah and Abdel-Hamid, 2020) and have a positive attitude and a lot of attention towards their handlers (Miklósi et al., 2000; Gaunet, 2008; Gaunet, 2009; Merola et al., 2012; Marshall et al., 2016).

It might be a little perplexing the lack of use, in all the cases indicated, of mixed-breed dogs. Probably this choice is due to the behavioral characteristics sought to be "enlisted", already known in purebred dogs, unknown in mixed breed. Of course, it is also necessary to have a perfect mental balance, unfortunately sometimes not possible in dogs from shelters, which in most cases have suffered at least the trauma of early detachment from the mother and/or abandonment. The figure of the Veterinary Behaviorist could be a valuable help in this case.

As for the specific questions, aimed at grasping any manifestations of malaise of varying magnitude, the answers provided by the dog handlers of the various Institutions present some interesting food for thought. First of all, being still active and playful after work (unless strenuous effort), at-

tracting the attention of the conductor to play and be pampered, returning to the kennnels "against their will", the presence of stress signs such as licking, scratching, yawning, nibbling the limbs or tail (see the whole list in the note of Question 17), "kennel stress", depression in retirement, could all be signs of stress due to boredom, which occurs when both external and internal stimulation are insufficient to maintain optimal arousal (Berlyne, 1960). Military dogs trained to be alert, in fact, could suffer much more than "civilian" dogs the condition of being closed in a kennel or in the house for hours or days (despite being moved periodically). It is the opinion of the author that coining a new definition such as "Inactivity Syndrome", instead of using the mere term "boredom", could help to ward off the mistaken belief that it is a trivial nuisance, as it is sometimes dismissed. Chronic boredom is neither trivial nor benign, yet it is still a very undervalued concept in animals, despite having important implications for animal welfare, the evolution of motivation and cognition and for human dysfunction at the individual and social level (Burn, 2017).

Too often animal boredom has been regarded as an anthropomorphic concept, or as a luxury compared to other more widely accepted welfare problems such as pain or stress proper (Wemelsfelder, 2005). However, given the intense distress that prolonged boredom can cause in humans and the cognitive impairment to which under stimulation can eventually lead, it could be a potentially serious and widespread animal welfare problem. The time is ripe for embracing animal boredom as a topic of genuine scientific and moral interest, allowing us to explore the biological basis of boredom in animal models and to evaluate interventions to fight against boredom and its associated problems in both humans and animals (Burn, 2017).

Self-reported attitudes in case of absence of the handler such as scratching to injury, licking to induce the formation of reddened and/or alopecic areas, are clear signs of stress that could also address to a problem of separation anxiety from the human companion and, albeit sporadic, are not to be underestimated. Ultimately, it is possible that both boredom and the departure of the handlers are concomitant factors that contribute to the manifestation of the stress signals highlighted in the questionnaires, but further diagnostic investigations are needed to establish that.

Another element that emerges from the questionnaires, which is excellent for the emotional stability of dogs, is the possibility (with a right of pre-emption) for the handlers to keep them at home in retirement: a new family or an association, however affectionate and reliable, represent a change (and therefore a stress factor) in the life of the dog, which should deal not only with a new environment, a new everyday life and advancing age, but above all with the detachment from the lifelong companion. Clearly, in the event that this is not possible, a family or an association certainly appear to be the best choices.

An interesting point to which emphasis should be given is Question n. 5: "Are the courses also taught by veterinarians with experience in behavior?" The courses referred to are those of training for dog handlers (Question 4) and it is remarkable that, although in all cases a training in behavior is declared, In the case of the State Police, meetings are organized with behaviorists, but only in the case of the National Fire Department courses are also held by veterinary doctors experienced in behavior. And it cannot be, therefore, a coincidence that they are the only ones who have not declared any significant disorder in their animals. The assistance of the figure of the Veterinary Behaviorist, should be consolidated practice especially in the case of working dogs, but the results show that in some cases this aspect is underestimated, probably unconsciously.

One could intervene, for example, to find a solution in the case of the "kennel stress" declared by the Carabinieri or try a work of desensitization in retirement in the case of hyper-reactivity to precise stimuli of Air Force dogs. In the latter case, in fact, depression could be linked not only to the lack of work (as often happens in humans, Mäcken et al., 2021), but also to the inability to properly manage the innumerable stimuli of everyday life.

The above reflection should not be interpreted as a criticism, but as a suggestion, as early detection of any signs of stress, is essential to intervene in time and improve the life quality of these servants of the State, especially in moments of deserved rest.

Finally an idea: according to the research of the author there are no studies that compare the health conditions of military conductors with their canine companions'. Harvey et al. (2016) as well as Milligan Saville et al. 2017), for example, investigate Post-traumatic Stress Disorder in Firefighters, while Price (2017) investigates psychiatric disability in Law Enforcement in general, but all from a human perspective. It would also be interesting to consider whether the same psychiatric disorders could be found within the Dog Unit.

Conclusions

As expected and as already widely discussed, dogs employed in the Forces interviewed do not show any serious psychological disorders, but mild / moderate signs of stress that require careful diagnostic investigations. From the informal chats who drew up this study had the opportunity to entertain with the dog handlers, the visceral affection that people in uniform have towards their four-legged companions clearly emerges. In these cases it may happen that, although the conductors, first of all, and the Authorities, in general, are very attentive to their animals, there are small signs that are inadvertently underestimated. The cases defined as "sporadic" should be investigated with physiological tests such as, for instance, the evaluation of blood or salivary cortisol, in order to try to understand if the behavioral signs actually correspond to a psychophysical condition of stress. Ultimately, although the trainers / handlers have a lot of experience, they cannot give a scientific explanation or medical justification for their observations. By working in synergy and collaboration, however, better results will certainly be obtained, in order to preserve the well-being of the dogs and of the entire Canine Unit.

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Studio preliminare sullo stress psicofisico dei cani nelle unitá cinofile delle forze armate nel post-attività e nel pensionamento

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Sintesi

L'intento del presente lavoro è stato quello di valutare il benessere dei cani utilizzati nelle Unità cinofile delle Forze dell'Ordine per la vigilanza e la salvaguardia della popolazione italiana. Lo scopo era capire come dei cani addestrati ad essere sempre pronti e vigili, reagiscano all'inattività, valutando, tramite un questionario per gli operatori delle Unità cinofile interessate, il loro livello di stress sia durante il periodo lavorativo (considerando come "inattivo" quel periodo che va dal rientro in casa/caserma dopo una missione fino alla missione successiva), sia dopo il pensionamento. I risultati non rilevano gravi disordini psicologici, ma lievi/moderati segnali di stress che richiedono di svolgere indagini diagnostiche accurate. I casi definiti "sporadici" sarebbero da approfondire con test fisiologici come, ad esempio, la valutazione del cortisolo ematico o salivare, in modo tale da cercare di capire se i segni comportamentali equivalgano effettivamente ad una condizione psicofisica di stress. Dallo studio emerge anche la necessità di una maggiore collaborazione con i medici veterinari esperti in medicina comportamentale.