Introduction
Little has been written about ways to overcome extreme fear in unsocialized puppy mill, semi-feral, or feral dogs when brought into human households. Methods such as counter-conditioning and desensitization have been used with fearful dogs, but they are inadequate for treating dogs who freeze as they hide in the farthest corner of a room or in the back of a crate, who refuse to eat, and whose principle focus is on escape by climbing fences or looking for opportunities to run away.

When the author adopted an intensely fearful dog from the rescue where she volunteered her behavior services, a review of the literature revealed nothing that could be applied to help the dog who had no prior exposure to people, was highly fearful and avoidant of both people and dogs, and who reacted fearfully to tiny changes in the environment.

Because of the absence of information, a participant-observation study was conducted to determine what methods might be useful for reducing intense fear and increasing social interactions while generating hypotheses for more rigorous study in the future.

Methods
Subject: The dog (Katie) was a 1-year-old Australian Shepherd who had escaped from a puppy mill and lived in the woods alone for two months as a puppy. When she was recaptured, she was so fearful that she could not be kept in the rescue with other dogs. She would not eat, even when food was left for her, and her only motivation was to flee. She either froze in position or tried to escape, even crashing through gates to do so. Since her first experiences with humans occurred far past the primordial socialization period for dogs, it was unknown how far she would be able to progress toward living in a home.

Treatment Methods: Two primary intervention approaches were adopted. First, all interactions between the two adult humans in the family and Katie were designed to build a positive association with people and to create a sense of safety. If Katie reacted negatively, the person backed off and did not repeat the behavior that preceded her avoidant behavior. If Katie had a neutral reaction (e.g., stayed in place, or moved toward the person), the preceding behavior was repeated. Second, twice each day for 5 minutes, a “social facilitator” dog (Kirrie) was brought into the room with the fearful dog. Kirrie was stable, adapted her behavior to other animals of several species, and freely engaged in play solicitations. She was a trained play therapy dog for human children. Since Kirrie had previously helped an extremely fearful feral cat by playing with him, it was hoped that these brief interactions and opportunities to play might add to the sense of safety in the environment. No pressure was placed on Katie to interact, and no lure toward feared individuals or objects was used.

Observation/Data Collection Methods: After each interaction, the investigator (author) recorded detailed notes about all aspects of the interactions, including human behaviors (usually the investigator), Katie’s observable body language, and when relevant, Kirrie’s behaviors and Katie’s reactions to them (again, observable behaviors). At least one human-Katie interaction a day and all interactions with Kirrie were videotaped on a camcorder on a tripod in the corner of the room. Data collection proceeded in this manner for 1 full year, and then was reduced to three logs and one video per week. Also, new behaviors of any kind were noted whenever they occurred. This level of observation was maintained for another year, when weekly logs and notations of new or changed behaviors were made, and videos were recorded approximately once per month, mostly of the emerging behaviors. For the final 3 years of the study, logs have been less frequent, noting new or changed behaviors. Videos have also been made of new or changed behaviors.

Other than “Does this work?” and “How far can Katie progress?” research questions remained open so that they could emerge from the data as is often done in qualitative participant observation studies.

Analysis/Results
Because there appears little previous work on methods to help extremely fearful dogs adjust to living with humans, this participant-observation study was designed with relatively open research questions. Analysis of the data used inductive processes to reveal general principles from many specific observations.

Because of the rich data obtained during the 5 years of this study, analysis is ongoing. Reported here are two of the most prominent results obtained in the first 2 years.

Initially, the only human presence that Katie could tolerate (without moving away or displaying significant stress signals) was the investigator lying prone, back turned, 15+ feet away. Very gradual use of the Treat-Retrieve method coupled with patience appeared to result in Katie’s increasing tolerance of human presence, gradually diminishing distances, and cautious voluntary approach behaviors to familiar people seated in chairs. Tolerance of people standing and moving did not occur until the 9 month mark. The first voluntary touches of humans occurred at the 4 month point, and were fleeting. These increased in frequency and duration throughout the length of the study, At the 1-year mark, Katie was seeking brief petting from familiar people.

Perhaps most significant was the role of dog-dog free play in furthering Katie’s social interactions with other dogs and later with humans. She returned a play poke in the 18th play session. After that, a clear temporal pattern emerged in the first 2 months and continued throughout the first 2 years reported here: positive changes in dog-dog play behaviors preceded positive changes in social behaviors. This sequence was never violated—the play changes occurred first each time. Play changes such as playing back, becoming more active, using objects, initiating object play, increasing number of canine play partners, responding to human play invitations, initiating play with humans, and playing energetically outdoors were followed by social changes such as spending more time in areas with other dogs, eating in the presence of human family members, sitting on the couch with other dogs, eating from human hands, initiating brief touch with humans, decreasing hypervigilance, playing fully with humans, seeking massage from humans, exploring the physical and social environment, and increasing freedom in movement and interactions outdoors. There were also dramatic increases in resilience following frightening events.

Conclusions
This exploratory study suggests that the creation of safety and the systematic use of dog-dog free play with a stable dog can positively influence the development of appropriate social interactions with other dogs and humans for unsocialized dogs past the primary period for socialization. Initial results occur over the course of several months, and the dog’s behavior can begin to approximate that of better socialized dogs during the first 2 years of intervention. Play development appears to precede social development. Five years into this project, Katie is indistinguishable from well-socialized dogs and functions as a full member of a canine, feline, and human family. These results have been informally replicated with 18 other semi-feral or un-socialized dogs. Results are strong enough to warrant study using quantitative research methods at this point.

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