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SWGDOG Membership Commentary on “Handler beliefs affect scent detection dog outcomes” by L. Lit, J.B. Schweitzer and A.M. Oberbauer.

The membership of the Scientific Working Group on Dog and Orthogonal detector Guidelines (SWGDOG), www.swgdog.org, is writing to comment on the article entitled “Handler beliefs affect scent detection dog outcomes” authored by L. Lit, J.B. Schweitzer and A.M. Oberbauer. SWGDOG is a recognized group of 55 subject matter experts from local, state, federal, and international agencies including scientists, law enforcement, and practitioners. Over the last seven years, SWGDOG, has developed and published 34 consensus based best practice guidelines for detector dog teams as well as resources to assist the community including recommended research methodologies.

The authors stated in their findings that “handler beliefs affect working dog outcomes, and human indication of scent location affects distribution of alerts more than dog interest in a particular location.” It is universally agreed that understanding how to minimize the manipulation of handlers and canines is important to incorporate into best practices. However, the relevant scientific and canine community represented on SWGDOG believes there are a number of characteristics of the study presented that limit or invalidate the conclusions that may be drawn from this research. In particular, the conclusion of this study cannot be extended to working detector dog teams.

This study was meant to focus on the behavior of the handlers and not the performance of the canines, but baseline performance of the canines, critical in evaluating handler influence, was not addressed. The failure to evaluate the proficiency of the canine teams in a controlled blind setting at the time of testing prevents scientifically valid conclusions; a canine with a propensity to false respond during blind testing would render different results than a canine with no propensity to false respond. The authors speculated throughout the paper as to possible explanations for the canine responses, but there is insufficient baseline data and insufficient controls to allow the readers to make meaningful conclusions. The authors did not indicate if the canine team’s training records were reviewed to determine if the teams regularly engaged in documented maintenance training to include (multiple) blank areas, and distracters, such as food and experimenter’s hand scent. Certification details are lacking and do not appear to conform to best practices. The use of two dual-trained drug/explosive canines described in this study as “certified” is problematic. This is universally recognized as an unsafe practice. The article failed to describe what certification standard

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was used for each detector dog team, when each canine team was initially certified and last certified, if distractors were included in the certification, and whether blank areas were included in the certification. There was also insufficient information regarding the handler's experience including number of historical deployments or searches conducted.

The experimental design did not consider the complexity of using detection canines in a study and did not follow detection canine testing best practices. Drugs and explosives should never have been introduced into the blank search area due to the potential for contamination of the test area and test materials. The authors stated that each day the experimenter carried a metal box and canvas bag containing drugs and explosives into the church. Though the containers were never opened in the test area, it does not alleviate the possibility of contamination. It is well known that drug and explosive odors can readily permeate even multiple layers of plastic and other materials. The authors should have mitigated the design problems by conducting a blind odor recognition assessment of participating canine teams prior to the start of the testing, as well as proofing the test area with a non-participating certified canine team to ensure the absence of target odors such as drugs or explosives.

The authors stated a "double-blind" test was conducted. In a conventional double-blind test, neither the tester nor the canine team would know any parameters of the test. The authors did not describe if the handlers were given instructions not to discuss their search results or whether they were sequestered until the conclusion of the study. In this study the handlers were instructed that "each condition might contain up to three target scents and that target scent markers consisting of a red piece of construction paper would be present in two conditions." It is SWGDOG's opinion that the authors should have provided some discussion of the extreme nature of the bias that was intentionally created relative to a typical detector dog scenario.

The unusually high "false alert"¹ rate indicates more than a cuing effect. There were 12 runs where handlers called more than the instructed maximum of odors present. SWGDOG members routinely involved in detection canine research indicate there are a number of factors that can contribute to higher than normal false response rates under testing scenarios. Failures that have occurred with dogs tested in an artificial environment have been attributed to factors including test site contamination, unfamiliarity and pressures associated with blind testing, extreme expectations, unfamiliar working procedures, and having canine teams search the same area multiple times. The authors did not describe if the handlers were instructed to search on or off-lead, or whether they were given a choice. If instructed to search in a particular method, the team must have demonstrated prior competency in that method.

Finally, the authors stated, "...handler beliefs affect outcomes of scent detection dog deployments." It should be noted that the performance of teams used in such small scale research studies, is not necessarily indicative of operational performance capabilities. The data collected from these 18 participating detection teams cannot be extrapolated to the thousands of deployed teams across the world. Future studies must include a diverse population of detection teams before any generalizations can be made. It is important that future studies be conducted that can accurately assess the extent to which handlers beliefs affect working dog outcomes. Designs that minimize this effect have been previously developed by SWGDOG Subcommittee 2 and should be incorporated into any such future studies to be conducted.

¹ SWGDOG and the scientific community use the term false response in their lexicon of terminology as opposed to the term false alert used in this article.