

## A Reply to Krapohl's Rejoinder to Criticism of his Article on Validated Polygraph Techniques

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In his lengthy rejoinder, Mr. Krapohl attempts to address all of the comments and criticisms of his article on validated polygraph techniques (Krapohl 2006), but upon close examination of the facts, it can readily be seen that he missed several important points that address the issue of validity versus reliability and supportive research.

Krapohl lists ten requirements that must be met for a research study to qualify for validation. Requirements number six and eight are of particular interest to this discussion and are thus set forth below:

6. Ground truth criteria must have been independent of the polygraph results.

8. Field cases must have been randomly selected, or with laboratory studies, subjects must have been randomly assigned to either deception or non-deception conditions.

Let us first examine requirement number six. Under that criterion, confessions and judicial convictions, both of which are independent of polygraph results meet the standard for ground truth. Yet Krapohl omitted Nathan Gordon's Integrated Zone Comparison Technique (IZCT) from his list of validated polygraph techniques, stating that his field research study on the IZCT with the Egyptian government (Gordon, Fleisher, Morsie, Habib, & Salah, 2000) "compared polygraph decisions with confessions and judicial decisions." Krapohl further stated that "in his data analysis Gordon did not disentangle the two types of confirmations to reveal the portion that was exclusively validity."

First of all, there is a significant difference between judicial *decisions* and judicial *convictions*. Judicial decisions include both Guilty and Not Guilty verdicts. Guilty

verdicts are in the category of convictions which require evidence of guilt *beyond a reasonable doubt*, whereas Not Guilty verdicts are often rendered due to a lack of sufficient evidence, lack of witnesses, legal technicalities such as violation of defendant's rights and other factors that the judicial system has in place to protect the innocent from wrongful convictions and in the process allows a significant percentage of guilty defendants to be found Not Guilty. On the other hand, Guilty verdicts have a very small percentage of wrongful convictions (0.5%) as indicated by research conducted by Huff, Rattner, and Sagarin (1986). Therefore there is an important distinction between judicial decisions and judicial convictions which Krapohl evidently failed to recognize.

Gordon's field study (2000) states "Among the 309 verified cases, 288 were confirmed by confession and 21 by judicial conviction. It should be noted that in the examinations confirmed by conviction, polygraph results played no part in the judicial decision." Furthermore, judicial convictions represented only 7.29% of the total confirmed cases, which is not a justifiable reason for disqualifying the study. But I would argue that even if half or more of the confirmed data base had been from judicial convictions, it would satisfy Krapohl's sixth standard regarding ground truth, and it would most certainly match the validity of confessions inasmuch as it has never been demonstrated that confessions enjoyed a lesser percentage of false confessions than the half of one percent (0.5%) wrongful convictions (Huff, et al 1986). This I had explained in my critical analysis of Krapohl's article. In his rejoinder he failed to acknowledge and discuss the cited research.

Krapohl's requirement number eight only requires that "Field cases must have been randomly selected." The mere random selection of cases does not satisfy the requirement for validation of a polygraph technique. All cases for a particular period of

time, i.e. 2005 thru 2006, must be selected and from all of those cases, all confirmed cases are retrieved including false positives, false negatives and inconclusives. Also figures for both confirmed and unconfirmed cases must be provided in the study. In addition, it would be wise to report the average score per chart for each examinee in both confirmed and unconfirmed cases to refute adversaries' claim that the reactivity of examinees in the confirmed cases was substantially greater than those from the unconfirmed cases where the errors could allegedly be hidden. Hence, the mere selection of confirmed cases even when randomly selected does not accurately determine the accuracy and error rate of the original examiner against ground truth since the random selection from a pool of cases could miss several confirmed false positives, false negatives and also inconclusives.

Blind studies by examiners who score confirmed polygraph charts of examinations conducted by the original examiner, even when randomly selected, are reliability studies, not validity studies. Krapohl stated "Because the blind scoring decisions were compared to ground truth rather than original decisions, I would submit that they meet the definition of a validation study. Moreover, because the blind scorers did not have access to information other than the charts, factors such as case facts and examinee behavior could have no influence on the chart scoring." I would submit that it is expected that the blind scoring of charts would be from confirmed cases and the only thing it proves is that an independent examiner can reliably come to the same conclusion as the original examiner based solely on the analysis of the physiological data recorded on the confirmed polygraph charts. Algorithms were developed to provide reliability in the analysis of the physiological data collected from the examinee, but its consistent results do not provide evidence of the validity of the technique.

In his rejoinder, Krapohl never addresses the issue I raised regarding his use of Frank Horvath's 1977 study of the *reliability* of polygraphists reading sets of charts when they were blind to the case facts and the original polygraphist's decisions. These were based on tests conducted with the *Arther Technique* to validate the *Reid Technique*. As I

stated in my critical analysis of his article on validated polygraph techniques, "using that rationale, the Backster Zone Comparison Technique can thus be validated by published validity studies of derivative zone comparison techniques (Bersh, 1969; Gordon, et al, 2000; Matte & Reuss, 1989; Raskin, Barland, & Podlesny, 1978; Raskin & Hare, 1978). But Krapohl was mute on that subject.

In the second part in item eight of Krapohl's standards, he states "with laboratory studies, subjects must have been randomly assigned to either deception or non deception conditions." In his rejoinder, Krapohl faults me for including only college students or military recruits in laboratory studies, and excluding examinees recruited through newspaper advertisements, employment agencies and the community, as if these other examinees, unlike those I mentioned, possessed those most essential emotions present in real-life examinations, such as the guilty subject's fear of detection, the innocent subject's fear of error, also known as the Othello Error, and the innocent subject's anger, all of which can cause an autonomic response. (Bongard, Pfeiffer, Al'Absi, Hodapp, & Linnenkemper, 1997; Ekman 1985; Matte, 1978; Matte & Reuss, 1989; National Research Council, 2003).

Krapohl cites two research studies (Kircher, Raskin, & Honts, 1994; and Pollina, Dollins, Senter, Krapohl & Ryan, 2004) which he states "speak directly to the question of differences between laboratory and field polygraph data." Krapohl admits that "the response intensities among physiological channels differed to some degree between the field and laboratory conditions. However classification accuracy of deceivers and truth-tellers was not significantly different from one another." To the layman, this would appear to be a convincing argument for the use of laboratory studies. However, the reactivity of examinees in laboratory studies only goes to indicate that the examinee had demonstrated some fear of detection to his/her lie to the relevant or comparison questions. But in field cases involving real-life examinees suspected of having committed a real crime with punitive consequences, some innocent examinees will show significant reactions to the relevant questions due to their fear of error

or anger, both of which are emotions that are most absent in laboratory studies. Those types of errors are classified as false positives and the percentage of false positive errors is significantly greater than false negatives. A good example of the effects of false positives was demonstrated in Krapohl's own article wherein he listed under validated polygraph techniques the Army Modified General Question Technique (MGQT) which was found to have been 97% correct without inconclusives in Deceptive cases, but only 25% correct without inconclusives in Truthful cases. Krapohl lumped the data from the DI and NDI cases together for an overall accuracy of 61% which enabled him to state "It is true that the overall accuracy of the Army MGQT was not high, though greater than chance."

I firmly believe that the accuracy for both the Deceptive and Truthful cases should attain a degree of accuracy well beyond chance and in the ninetieth percentile, thus should be reported separately. Since the literature on polygraph research acknowledges that false positives dominate the error rate in real-life polygraph examinations, it behooves researchers to conduct studies that address that issue which can only be resolved in field studies. The importance of having a polygraph technique that correctly identifies the innocent with at least a 90% rate of accuracy is consistent with our judicial system which requires proof beyond a reasonable doubt to convict a defendant. One famous jurist, Sir William Blackstone<sup>1</sup> went so far as to state "Better that nine guilty men go free than one innocent man be convicted." The polygraph profession should adopt the same doctrine as the medical profession that requires that they "do no harm."

Krapohl makes no mention of the value and importance of empirical data that I submitted in my critical analysis, namely Robert Brisentine's 1974 study and collection of statistics on U.S. Army C.I.D. polygraph examination during the calendar year 1972.

Furthermore, he fails to acknowledge that the U.S. Army C.I.D. and its successor DoDPI have been using Backster's You-Phase ZCT, a true single-issue test that DoDPI labeled the Bi-Zone Comparison Technique because it contained only two relevant questions as found in the original and current Backster ZCT. DoDPI's use of the Bi-Zone Test was limited in favor of their 3-Relevant Question ZCT which includes an evidentiary question that Backster has been objecting to for many years. Hence, Backster's criticism was directed at the Federal 3RQ ZCT, not its You-Phase (Bi-Zone) ZCT which Backster reminded them was a misnomer because this You-Phase had in fact three zones (Red, Green and Black). Therefore it does make sense that the long period of usage of the You-Phase ZCT by the Army and DoDPI plus their research on that technique should apply equally to the Backster ZCT.

There is no mention in Krapohl's rejoinder of the research by Bersh (1969) or Raskin, et al. (1978), which validates the Backster ZCT, nor is there any mention of the research study by Huff et al. (1986) which supports the use of judicial convictions in establishing ground truth. It appears that Krapohl simply ignores those research studies that contradict or do not support his position.

Finally, as I had indicated in my critical analysis of Krapohl's article on validated polygraph techniques, replication studies of initial research should be conducted by an independent and separate entity, preferably with the use of field studies. Interestingly, Krapohl listed seven laboratory studies that validated the Utah Probable Lie Technique (including Rovner, 1986 and Horowitz, Kircher, Honts, & Raskin, 1997), all of which were conducted at the University of Utah. There were no independent field studies validating the Utah PLT. Furthermore, there was no independent field replication of the validity study conducted on the Test for Espionage and Sabotage (Research Division

<sup>1</sup>Sir William Blackstone fashioned his belief after this text from The Holy Bible in which Abraham questions whether God intends to kill the innocent along with the wicked when he destroys Sodom and Gomorrah; Genesis 18:26, And the LORD said, If I find in Sodom fifty righteous within the city, then I will spare all the place for their sakes. And he said, Oh let not the Lord be angry, and I will speak yet but this once: Peradventure ten shall be found there. And he said, I will not destroy it for ten's sake. Genesis 18:23-32 1.

Staff (1995a and 1995b), nor was there any independent field replication of the validity study on the Federal Zone Comparison Technique (Blackwell 1998; Krapohl, 2005; Yankee, Powell, & Newland 1985), all research

having been conducted at DoDPI. In my opinion, the research standard for validating a polygraph technique should require the use of a field study that is replicated by another field study from an independent entity.

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