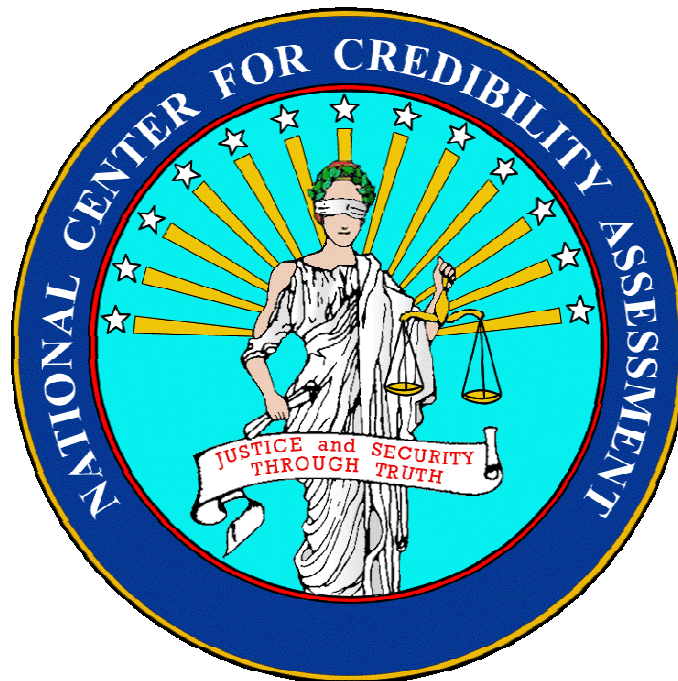


NATIONAL CENTER FOR CREDIBILITY ASSESSMENT

PDD 502 – PDD ANALYSIS I



TEST QUESTION CONSTRUCTION

Table of Contents

1.	Overview of Test Question Construction.....	3
2.	Definition and Types of Relevant Questions.....	3
3.	Prioritizing/Selecting Issues (Targets) for PDD Testing	4
4.	Constructing Relevant Questions	7
5.	Probable Lie Comparison Questions.....	8
6.	Sacrifice Relevant Question.....	11
7.	Symptomatic Questions.....	11
8.	Irrelevant Questions	12
9.	Polygraph Test Question Limitations	12
10.	References	13

1. Overview of Test Question Construction

1.1. The central element of any Psychophysiological Detection of Deception (PDD) examination is the examinee's physiological responses to a set of questions. Questions are the fundamental tools of a PDD examiner. How the questions are structured and sequenced represent the principle differences among the various PDD testing formats.

1.2. There are several types of questions used in PDD testing. The objective of this text is to provide information about five types of PDD questions that an examiner might encounter in specific issue PDD testing. The question types are sacrifice relevant, relevant, comparison, symptomatic and irrelevant.

1.3. There are simply too many combinations to cover the specific structure and rationale of every question for all PDD testing formats. As such, this discussion will be limited to a “*generic*” review of test question construction that is common to most specific issue PDD testing formats. Test question construction procedures that are unique for a particular testing format will not be discussed. Additionally, there may be times when the investigative case facts will dictate modifying the test questions to best serve the particular objectives of a specific PDD examination.

2. Definition and Types of Relevant Questions

2.1. A relevant question is a question asked during a PDD examination that pertains directly to the matter under investigation for which the examinee is being tested. There are two general types of relevant questions used in most specific issue PDD testing formats. These are primary relevant questions and secondary relevant questions.

2.2. A primary relevant question is a PDD test question that addresses the primary issue. The purpose of the primary relevant question is to test for direct involvement, i.e., the “did you” aspect of PDD testing. It uses an action verb to describe the act that was committed. Unless dictated by the PDD testing format or issue being tested, a primary relevant question requires the examinee to answer “No”. The following are examples of primary relevant questions:

2.2.1. Did you steal any of that money? No

2.2.2. Did you smoke any of that marihuana? No

2.2.3. Did you shoot that man? No

2.2.4. Did you stab that woman? No

2.3. When conducting PDD examinations of informants, victims, or witnesses the examiner may construct relevant questions that require affirmative answers. In this

type of examination, the issue becomes the examinee's truthfulness, not whether they committed a specific crime. The examiner is simply attempting to verify information previously provided by the examinee. The following are examples of "Yes" answered relevant questions:

2.3.1 Did that man bring marijuana into the classroom? Yes

2.3.2 Did that man show you a substance he identified as marijuana?
Yes

2.3.3 Did that man offer to sell you marijuana? Yes

2.4. A secondary relevant question is a PDD test question that addresses a secondary element of the issue addressed in the primary relevant question. Typically, if the case facts allow, this category of relevant question addresses four secondary elements of the primary issue: (1) secondary involvement, such as help, plan, or participate; (2) secondary element, such as seeing, hearing or knowing who committed the primary act; (3) knowledge of the nature or location of evidence; and (4) physical acts that support the primary issue, such as tearing, cutting or breaking. This question does not address direct involvement as direct involvement is reserved for the primary relevant question. The secondary relevant question(s) shall be constructed to require the same answer as the primary relevant question(s). Some examples of secondary relevant questions are:

2.4.1 Did you help anyone steal any of that money? No

2.4.2 Did you see anyone steal any of that stereo equipment? No

2.4.3 Do you know where any of those stolen weapons are now? No

2.4.4 Did you tear any of that woman's clothing? No

3. Prioritizing/Selecting Issues (Targets) for PDD Testing

3.1 There are many guidelines that influence how proper relevant questions are selected and constructed. Two critical steps examiners must consider when developing proper relevant test questions are target selection and appropriate relevant question construction.

3.2 Target selection is an extremely critical element in developing relevant questions. In complex investigative matters, the PDD examiner must first determine the number of issues or targets to be resolved. In specific issue testing, it is imperative that the correct targets or issues be selected for testing. Additionally, in investigations where there are multiple targets to be tested, it is critical that the correct target is selected for the initial series. If necessary, additional targets or issues can be resolved with additional PDD testing.

3.3. During the target analysis selection phase, the examiner will generally consider four elements in selecting the initial issue for testing. The four elements are: (1) determine the number of issues to be tested and then select the most serious/intense issue; (2) focus on the action that describes what the suspect did to commit the act(s); (3) focus on the probable motive of the suspect; and (4) select the target that connects the suspect most closely to the crime.

3.4. After all the issues have been determined in a complex investigation; the examiner should reference a directive, statute or other appropriate document to determine the most serious offense (issue) in terms of potential prison confinement. For example, in the military judicial system, the examiner usually refers to the maximum punishment tables listed in the Uniform Code of Military Justice (UCMJ) Section of the Manual for Courts-Martial (MCM). This particular index describes the type of crime, amount of potential confinement for each offense, and various other administrative actions that may be taken against an offender. For instance, a male examinee is suspected of stealing a female's purse and then raping her. Within the MCM, in terms of potential confinement for larceny and rape, the more serious offense is rape. Therefore, the issue to be addressed in the primary and secondary relevant questions for the initial series should focus on the rape. If additional testing is necessary for the larceny issue, an additional series can be conducted for that aspect of the investigation.

3.5. After the most serious offense has been determined in multiple issue investigations, the examiner should then focus on the action that describes what the suspect did to commit the offense. In performing this task, the examiner must ensure that the most appropriate relevant questions have been developed for the "*case-at-hand*." Additionally, if the correct "*action verb*" is presented in the question, it will help to prevent the suspect from rationalizing out of the act posed by that relevant question. The following are examples of appropriate verbs that best describes the act committed by the suspect:

3.5.1 Did you "*smoke*" any of that marihuana?

3.5.2. Did you "*tear*" that woman's blouse?

3.5.3. Did you "*shoot*" that man?

3.5.4. Did you "*make*" any of the writings on that check?

3.5.5. Did you "*hit*" that woman?

3.5.6. Did you "*steal*" any of that money?

3.6. During the development of primary and secondary relevant questions, the PDD examiner should avoid asking questions that probe the suspect's "perceptions" or "intent" while committing the crime. Sometimes these conditions change over time or a suspect's original intent may have changed after the crime was initiated. This may allow a suspect who committed the crime to rationalize out of the relevant question. For

example, a suspect commits a burglary to steal property inside a residence. After obtaining entry to the residence, he discovers a woman inside and decides to rape her. His original intent was to steal property but changed to rape after the crime was initiated. There is case law in which a trial judge disallowed a polygraph examination from being admitted into evidence because of the wording of the relevant questions asked of the examinee (United States v. Woodward, 1998). In this case, one of the reasons articulated by the trial judge was that the examiner used relevant questions that tested the intent of the examinee. The trial judge reasoned that an examinee's physiological responses to questions regarding her specific intent would be different from her responses to questions about her actual conduct. The following are examples of questions that might probe an examinee's perception or intent and should be avoided:

3.6.1. Did you "*purposely*" touch that female's buttocks?

3.6.2. Did you "*deliberately*" set fire to that house?

3.6.3. Did you "*intend*" to hurt that child?

3.7. After determining the most significant issue for the initial test and constructing the relevant questions based on the act that caused the crime to be committed, it is necessary to try to understand the suspect's motivation for committing the crime. This is especially true if there are multiple issues in an investigation with potentially equal punishments. For example, during a burglary and subsequent theft of money, the suspect's motive was more than likely to steal money (or anything else) from inside the residence. The burglary was simply an act that was accomplished to satisfy the theft motive of the suspect. Therefore, the target (primary issue) of the relevant questions for the initial PDD examination should focus on the theft. If the suspect is deceptive to the theft issue, then more than likely, this same individual also committed or was involved in the burglary. However, if the investigative case facts disclose the possibility of multiple suspects with different levels of involvement in the crime and if deemed appropriate, another PDD examination can be conducted for the burglary issue.

3.8. Finally, case facts must be considered when selecting the initial issue to explore in the relevant questions. As indicated above, in an investigation with multiple issues involving multiple suspects, a suspect might be involved in one or more of the issues, but not all. If possible in these instances, the PDD examiner should target the issue that most closely connects the suspect to the crime. In many cases, this crime connection can often be provided by talking with the case agent/investigator and reviewing the investigative file for circumstantial evidence or other case facts.

3.9 After the correct target has been selected for testing, the PDD examiner must then construct the relevant questions in a manner suitable for the current investigative case facts and examinee. The following information should assist in developing the correct relevant questions for the target of the PDD examination.

4. Constructing Relevant Questions

4.1. Relevant questions should be written in a clear and concise style. The questions should not contain any unnecessary verbiage, as this tends to make the questions more cumbersome and difficult to understand. Relevant questions must be constructed in a manner so their meaning is unmistakable. Relevant questions should also be developed in a manner consistent with an examinee's intelligence level. If the examinee does not understand a relevant question due to complicated wording or an inadequate vocabulary cognitive processing could occur possibly affecting the PDD examination outcome. Relevant questions should address only one issue, i.e., should not be compound questions. The following are examples of poorly worded questions:

4.1.1. Did you steal any money or anything else from that store yesterday?

4.1.2. Did you manipulate any part of that female's sex organs for sexual gratification, while at her house?

4.2. Rather than asking the above questions which are compound in their meaning and contain extra verbiage, the examiner should consider asking the following relevant questions:

4.2.1. Did you steal any of that money?

4.2.2. Did you touch that female's vagina?

4.3. The examiner should also avoid using legal jargon or other words that could be perceived as emotion evoking. Words such as assault, rape, sodomize, murder, molest, mutilate, butcher, and kill should not be utilized in relevant questions. As indicated above, the examiner should use an action verb in the relevant question that describes how the crime was committed, i.e., hit, strike, stab, shoot, cut, steal, etc.

4.4. When presented to the examinee, the relevant questions should pose a dichotomy so they will have to answer "Yes" or "No." This helps to avoid vague or extended answers and ensures that the examinee's position on the issue is clear. If the examinee is allowed to verbally reply in any other manner, this could generate artifacts or other excessive noise in the physiological tracings, making test data analysis difficult or impossible. All relevant questions on any given series shall be constructed to elicit the same answer. A test that would require the examinee to provide both "Yes" and "No" responses to the relevant questions on the same chart could elicit physiological responses due to the cognitive process required to discriminate which relevant questions are answered in the affirmative versus the negative.

4.5. The examiner should not construct relevant questions that are worded in the form of an accusation or appear to be judgmental. This might cause the examinee to

feel the examiner has already reached a conclusion about his honesty or involvement in the crime. For obvious reasons, the following types of relevant questions **should not** be asked during a PDD examination:

- 4.5.1. After you forged that check, did you cash it?
- 4.5.2. After John shot that bank teller, did he tell you where he hid the weapon?
- 4.5.3. Did you use any of that cocaine you purchased from Smith?

4.6. Because of the possibility of multiple suspects sharing fruits of the crime, or money amounts being inflated to cover other possible criminal activity (employee theft, management embezzlement, etc.), the examiner should always use the phrase "*any of*" when the issue involves multiple items or amounts of money. This will help to prevent the examinee from rationalizing his involvement in the crime because he only stole/received a portion of the money. In this regard, the following are examples of improper relevant questions:

- 4.6.1. Did you steal the \$495.00 from that room?
- 4.6.2. Did you burn those classified documents?

4.7. Instead of the above examples, the examiner should consider asking the following relevant questions:

- 4.7.1. Did you steal any of that money?
- 4.7.2. Did you burn any of those classified documents?

5. Probable Lie Comparison Questions

5.1. In most specific issue testing formats, a comparison question is designed to be a probable lie. In most PDD literature, a probable lie is defined as the denial of a misdeed that a person has more-than-likely engaged in or considered. In the various comparison question test formats, comparison questions are sequenced so that responses to these questions are compared to the physiological responses of the relevant questions.

5.2. Based on the theory of psychological set, it is assumed that *No Deception Indicated* (NDI) examinees will be more concerned, and thus, more physiologically aroused with comparison rather than relevant questions. During a PDD examination, psychological set is based on the presumption that an examinee will focus his attention on the test questions that present the greatest significance (signal value) to his immediate safety or well being. During the pretest interview, the examinee should be informed there are two issues of equal importance, i.e., the offense under investigation and *the "background issues"* that are similar in nature to this type of behavior. During this

procedure, the examiner should never tell the examinee there is a distinction between the relevant and comparison questions to allow the examinee to form their own “*psychological set*.”

5.3. In constructing probable lie comparison questions, they should be similar in nature, but unrelated to the specific crime or issue being tested. To ensure that the comparison question is not potentially relevant, a comparison question must be separated from the relevant issue by time or place. For example, in an issue involving the theft of \$10,000 in February 200_ (current year), the primary relevant and comparison questions might be:

5.3.1. Relevant question: Did you steal any of that money?

5.3.2. Comparison question (time): Before 200_ (current year), did you ever steal anything? (Time bar is before crime occurred)

5.3.3. Comparison question (place): Before arriving in South Carolina, did you ever steal anything? (Crime occurred after examinee arrived in SC)

5.4. In certain instances, comparison questions can also be separated from the relevant issue by category. However, the examiner must exercise extreme caution in using a “*category*” comparison question without a time or location event. This is to ensure that the life experiences incorporated in the comparison question do not fall within the relevant issue category, thus invalidating the entire PDD examination. In some instances, category comparison questions that appear to be separated from the relevant area may actually be relevant. For instance, if an examinee is suspected of stealing their roommate’s private property, a proper “*category*” comparison question might be: “*Did you ever steal any government property?*” However, an examiner would not want to ask this same examinee, “*Did you ever steal anything at all.*” This comparison question would clearly incorporate the roommate’s stolen property. As such, it would become a relevant question rather than a “*category*” comparison question.

5.5. In most instances, a comparison question should use the same or similar action verb as that used in the primary relevant question. Such as:

Relevant Question	Comparison Question
Steal	Steal
Shoot/Stab/Hit	Hurt/Harm/Injure
Set Fire	Damage/Destroy
Drug Possession	Contraband
Drug Use	Lie (but not about using drugs)
Rape Suspect	Sex comparison/Lie about sexual activities
Child Abuse (Physical)	Hurt/Harm/Injure

5.6. A probable lie comparison question should be broad in scope and time so that it captures as many past life experiences of the examinee as possible. Theoretically,

as the scope and time of the comparison question increases, the more significant that question becomes (signal value increases) for the examinee. This best serves the interest of the NDI examinee. Each comparison question in a specific issue PDD examination should address a single issue, i.e., should not be a compound question.

5.6.1. Acceptable: Before, this year, did you ever steal anything?

5.6.2. Unacceptable: Before this year, did you ever steal anything from a loved one or a place you worked (compound issue in same question)?

5.6.3. Typically, if a comparison question contains an “and” or an “or” in describing the issue, it will be considered an unacceptable compound question

5.7. Imagine that at 2100, 11 Feb 200_ (current year), PVT Jones was stopped for a routine traffic inspection. At that time, a bag of marijuana was found in his car. Jones denied any knowledge or involvement with the marijuana. If the following comparison question was utilized, it would be improper, even though it is separated from the relevant issue by time: “*Before 200_ (current year), did you ever smoke any marijuana?*” If it incorporated any active duty time prior to February 200_ (current year), this comparison question would be improper in the military because the military member would still be in violation of the Uniform Code of Military Justice. In this instance, using a “lie” comparison question would be the proper type of comparison question to use, such as, “*Before 200_ (current year), did you ever lie about anything important?*”

5.8. As described previously, there are some instances where using the same action verb in the comparison and relevant questions would be inappropriate. In these instances, it is generally acceptable to utilize “lie” comparisons only. Typically, the categories of relevant issues where lie comparison questions would be more appropriate are:

(1) Confirmatory testing, (2) Use of illegal drugs, and (3) Child sexual abuse (PDD examination of pedophiles). Finally, in most instances, it is allowable to use one “lie comparison” in most PDD examinations as long as that lie comparison is related to the relevant issue. For example, in a theft issue, it is generally acceptable to utilize one comparison question that is phrased: “*Before _____, (separated from relevant issue) did you ever lie about anything you ever stole?*”

5.9. When an examinee makes an admission to a comparison question, it must be incorporated into the question so the examinee can still answer “No.” Typically, this is accomplished by adding a prefix at the beginning of the comparison question. Some examples of possible comparison question prefixes are (not all inclusive):

5.9.1 Other than what you told me, before 200____, did you...

5.9.2 Besides what we discussed, prior to arriving at____, did you...

5.9.3. Other than that one time, before your ____ birthday, did you....

5.10. When incorporating an admission prefix into a comparison question, the examiner should not list the examinee's specific admission. This will prevent inadvertent disclosures of comparison question admissions to unauthorized personnel. Examples of improper comparison question prefixes are:

5.10.1. Other than those two candy bars, the pornographic magazine, and the money from your Dad's wallet, before 2000, did you ever steal anything?

5.10.2. Besides the money from your spouse's wallet, prior to arriving at Fort Jackson, did you ever steal...?

5.10.3. Other than those four police officers, seven school teachers, and your parents, before this year, did you ever lie . . .

6. Sacrifice Relevant Question

6.1. A sacrifice relevant question is designed to serve as an introduction to the relevant issue questions. During the data collection phase, whether innocent or guilty, some examinees may physiologically respond to the first relevant question that is asked. As such, in PDD testing formats that have a sacrifice relevant question, it is not scored during the test data analysis phase. Thus, it is "sacrificial." In most PDD testing formats there is a standard format for the sacrifice relevant question. It is worded so the examinee will answer "Yes." Most specific issue testing formats will provide the exact wording of the sacrifice relevant question. Below are some generic examples:

6.1.1. Regarding that stolen vehicle, do you intend to answer each question truthfully?

6.1.2. Regarding your complaint about that man, do you intend to answer each question truthfully?

6.1.3. Regarding whether or not you shot that man, do you intend to answer each question truthfully?

7. Symptomatic Questions

7.1. Symptomatic questions are designed to test for an outside issue that may be more significant (have more signal value) for an examinee than the comparison and relevant issues. Symptomatic questions are not scored during the test data analysis phase of a PDD examination. Symptomatic questions are utilized in the "*Zone Comparison Test*" format. When used, the specific PDD test will dictate their placement in the testing format. Some examples of symptomatic questions are:

7.1.1 Do you believe I will only ask you the questions we reviewed?

7.1.2. Is there something else you are afraid I will ask you a question about?

8. Irrelevant Questions

8.1. An irrelevant question is the first question asked during a PDD examination. It is designed to introduce the examinee to the beginning of the test questions and to allow the orienting response to habituate before a scoreable question (comparison or relevant) is asked. It is a neutral question that must be unrelated to the issue being tested. Irrelevant questions are worded so the examinee always answers "Yes." They are not scored during the data analysis phase. During the data collection phase of most specific issue formats, an irrelevant question can also be inserted after an artifact occurs or there is continued response from previous stimuli. This will allow the examinee to return to a state of homeostasis before a scoreable question is asked. Some examples of irrelevant questions are:

8.1.1. Are you now in South Carolina?

8.1.2. Are the lights on in this room?

8.1.3. Are you now sitting down?

9. Polygraph Test Question Limitations. As established in DoD Instruction 5210.91, it is NCCA policy that test questions probing a person's religious, racial, or political beliefs and lawful affiliations that are not related directly to the investigation are prohibited.

REFERENCES

Abrams, S (1989). *The complete polygraph handbook*, Lexington, MA: Lexington Books.

Commonwealth v Woodward, 427 Mass. 659, 694 N.E. 2d 1277 (SJC-07635) (1998)

Janniro, M. J. (1993). Effects of computer-based instruction on student learning of psychophysiological detection test question formulation. Journal of Computer-Based Instruction, 20 (2, Spring), p 58-62.

Matte, J. A. (1980). The art and science of the polygraph technique. Springfield, IL: Charles C. Thomas Publisher.

Matte, J. A. (1996). Forensic psychophysiology using the polygraph: Scientific truth verification-lie detection. Williamsville, NJ: J.A.M. Publication

United States v. Woodward, 427 Mass. 659, 694 N.E., 2d., 1277 (SJC-0763, 1998)