

CONTROL QUESTION TEST (CQT)

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1. Core Definition

The Control Question Test, commonly abbreviated as **CQT**, is a psychophysiological technique utilized primarily within the field of polygraph examinations, specifically designed for investigations concerning criminal activity or specific incidents of deception. It functions as a comparison test, premised on the theory that a deceptive individual will exhibit a greater physiological response when answering questions directly related to the crime (relevant questions) than when answering questions designed to evoke general anxiety or concern about past misdeeds (control questions). Conversely, an innocent individual, whose primary concern is being falsely accused, is theoretically expected to react more strongly to the morally challenging control questions than to the relevant ones, knowing they are truthfully answering the latter. The fundamental goal of the CQT methodology is thus to create a psychological conflict for both the truthful and deceptive subject, allowing the polygraph examiner to differentially measure the intensity of the resulting autonomic nervous system responses, which are typically recorded via channels measuring cardiovascular activity, respiration, and electrodermal activity (skin conductance).

The structure of the CQT is rigorously defined, requiring the examiner to formulate a specific set of questions that fall into distinct categories: relevant, irrelevant, and control. This structure is not merely a sequence of inquiries but an integrated psychological tool used to manipulate the examinee's focus and anxiety levels during the test administration. It is essential that the test is administered under conditions designed to maximize the subject's belief in the efficacy and accuracy of the instrument, thereby enhancing the likelihood of measurable physiological differentiation between the question types. The effectiveness of the CQT, therefore, relies heavily not only on the physical instrumentation but also on the skilled pre-test interview process, during which the control questions are developed and the psychological "set" (or attitude) of the examinee is established and manipulated by the examiner.

Historically, the CQT has been the most dominant technique used in law enforcement and government security screening globally, often overshadowing alternative methods like the Guilty Knowledge Test (GKT) or Concealed Information Test (CIT). This prevalence is due, in part, to its ease of application across a wide range of specific incident investigations where detailed crime knowledge may not be available to the examiner, unlike the GKT which requires detailed, verifiable information known only to the perpetrator. Despite its widespread institutional use, the CQT remains one of the most contentious tools in forensic psychology, facing substantial scientific scrutiny regarding its underlying assumptions and the reliability of its results in distinguishing truth from deception.

2. Historical Development and Evolution

The origins of the Control Question Test can be traced back to the foundational work in polygraphy in the mid-20th century, particularly the contributions of Cleve Backster in the 1960s. Backster sought to refine the earlier Relevant/Irrelevant (R/I) technique, which was heavily criticized for generating high false-positive rates because almost any question related to a serious crime could elicit a strong general emotional response in any subject, regardless of guilt. The innovation introduced by the CQT was the strategic inclusion of the 'control question'--a broad, ambiguous query about past wrongdoing--intended to create a comparison stimulus that would elicit a greater response in the truthful subject than the relevant question.

Before Backster's formalization, various iterations of comparison question techniques existed, but the CQT codified the structure and the scoring logic that defined modern polygraph use. His formalized system aimed to standardize the test administration, specifically dictating how the control questions should be framed to make them "probable lies" for the examinee. The historical development of the CQT has seen numerous methodological adjustments, leading to various versions, including the Modified General Question Technique (MGQT) and the Zone Comparison Technique (ZCT). These adaptations primarily focused on optimizing the placement, number, and type of questions within the structure to improve the comparison validity and reliability of the final numerical scores generated by the examiner.

The adoption of the CQT by government and law enforcement agencies accelerated rapidly in the latter half of the 20th century, positioning it as the primary investigative tool in polygraphy. This institutional acceptance occurred often despite the lack of rigorous, independent scientific validation. The evolution of the technique has been marked by a shift from purely subjective interpretation of charts to the introduction of numerical scoring systems (such as the federally used numerical scoring system, or FUSS) designed to introduce an element of objectivity to the analysis. However, critics argue that these scoring systems merely quantify the subjective judgments embedded in the CQT's psychological premises, rather than solving the underlying validity issues inherent in measuring anxiety as a proxy for deception.

3. Key Concepts and Components

The efficacy and mechanism of the CQT rely entirely on the careful selection and strategic implementation of three core categories of questions, each serving a distinct psychological and physiological purpose during the examination. The interaction between the responses elicited by these different categories forms the basis of the test interpretation. Understanding the function of each question type is crucial to comprehending the CQT methodology.

Relevant Questions (R): These questions address the specific matter under investigation, such as "Did you steal the money from the safe on Tuesday?" The physiological response to these

questions is hypothesized to be maximized in the deceptive subject, who fears the discovery of their lie. These questions are designed to be concise, unambiguous, and directly tied to the specific details of the incident.

Irrelevant or Neutral Questions (N): These questions are used as baselines, addressing benign factual matters to which the examinee is presumed to be truthful and emotionally indifferent (e.g., "Is your name John Smith?" or "Are the lights on in this room?"). Responses to these neutral questions establish the subject's baseline physiological reactivity under non-stressful conditions, providing a benchmark against which the responses to R and C questions are compared.

Control Questions (C): These are the defining feature of the test. Control questions are broad, temporally ambiguous inquiries concerning the subject's honesty or morality in the past (e.g., "Before the age of twenty-five, did you ever lie to someone in authority to avoid trouble?"). These questions are crafted to cover a long period of the examinee's life and are deliberately vague. The examiner often works to convince the subject that a definite negative answer to these questions is unlikely, thus creating a "probable lie" or inducing significant anxiety, even in innocent individuals.

The intended psychological mechanism dictates that the guilty subject fears the relevant question most because they know they are lying about the crime, resulting in a stronger physiological response ($R > C$). Conversely, the innocent subject is assumed to be relieved to answer the relevant question truthfully but is highly distressed or uncertain about the control question, fearing the implication of past moral failings or doubting the complete veracity of their general past behavior, resulting in a stronger control response ($C > R$). The success of the CQT hinges on the examiner's ability to successfully manipulate the differential salience (importance or perceived threat) of the relevant versus the control questions for both the guilty and the innocent.

4. Methodology and Scoring Techniques

The CQT methodology involves a structured sequence that begins with a pre-test phase, followed by the chart collection phase, and concluding with the post-test analysis. The **pre-test phase** is arguably the most critical component, as the examiner must gain behavioral admissions and convince the subject of the test's high accuracy (a technique known as stimulating the guilty and calming the innocent). During this phase, the control questions are developed and reviewed with the subject to ensure they elicit concern. The examiner's goal is to ensure the subject perceives the control question as a legitimate threat to their results if they are innocent of the crime, thus maximizing the psychological tension associated with the control questions.

The **chart collection phase** typically involves the administration of three to five separate polygraph charts, each containing the full sequence of relevant, irrelevant, and control questions, usually presented in a pseudo-randomized order to mitigate habituation effects. The specific number of questions can vary based on the specific CQT variant used (e.g., the Zone Comparison

Test often uses three relevant questions compared with three control questions). The physiological data captured during these repetitions are then analyzed.

Scoring the CQT is a comparative process that assesses the magnitude of the physiological response (such as changes in skin conductance or duration of cardio activity suppression) elicited by the relevant questions versus the control questions. Modern CQT uses **numerical scoring systems**. In these systems, responses are graded on a scale (e.g., -3 to +3) comparing the response to a relevant question pair against the adjacent control question pair. A strong reaction to the relevant question results in a negative score (indicating deception), while a strong reaction to the control question results in a positive score (indicating truthfulness). These scores are summed across all repetitions and physiological channels. If the cumulative score exceeds a predetermined threshold (e.g., +6 or higher), the result is typically "No Deception Indicated" (NDI); if it falls below a negative threshold (e.g., -4 or lower), the result is typically "Deception Indicated" (DI). Scores falling within the inconclusive range necessitate further testing or result in an inconclusive outcome.

5. Applications and Usage

The primary application of the Control Question Test lies in specific incident testing, particularly within the context of **criminal research and investigation**. Law enforcement agencies rely on the CQT to attempt to narrow down suspect pools, corroborate witness or suspect statements, and provide supplementary investigative leads. Unlike general screening tests which assess broad suitability (though the CQT structure is sometimes adapted for pre-employment screening), the CQT is tailored to assess truthfulness regarding one specific, temporally defined event, such as a theft, assault, or espionage incident.

In jurisdictions where polygraph results are admissible in court (which are highly restricted, especially in the United States federal system), the CQT output may influence plea bargaining or sentencing, though its use as direct evidence of guilt or innocence is widely prohibited due to reliability concerns. Furthermore, governmental agencies, particularly those involved in national security and counter-intelligence (e.g., Department of Defense, CIA, FBI), frequently employ the CQT for investigating security breaches, leaks of classified information, and internal misconduct, seeking to leverage the test's psychological framework to elicit information even if the results are not admissible in a court of law.

Beyond the formal justice system, the CQT is also utilized in private sector investigations, such as internal investigations into corporate fraud, embezzlement, or workplace theft, often governed by highly specific state and federal regulations concerning employee polygraph rights (such as the Employee Polygraph Protection Act of 1988 in the US). In these contexts, the CQT is often used as a tool to leverage admissions or confessions, rather than solely relying on the numerical score. The

psychological pressure exerted by the CQT protocol--particularly the detailed discussion of the control questions and the fear of failing a scientific test--is often cited by proponents as highly effective in encouraging subjects to reveal hidden information.

6. Theoretical Basis and Psychological Mechanisms

The theoretical foundation of the CQT rests on the differential activation theory of physiological arousal. This theory posits that the act of deception concerning a critical, life-altering event (the crime) generates greater cognitive load and emotional response (specifically, the fear of detection) than any other stimulus in the test structure. This heightened state of arousal is mediated by the autonomic nervous system, leading to measurable changes in sympathetic nervous system indicators, such as reduced peripheral blood flow or increased sweating.

For the truthful subject, the primary emotional conflict is shifted away from the relevant questions and onto the control questions. The honest individual fears that the ambiguous control questions might be scored against them, potentially resulting in a false positive outcome indicating deception. Therefore, the anxiety, stress, and cognitive effort associated with ensuring a favorable outcome ($C > R$) are theoretically concentrated on the control questions. The CQT, therefore, does not measure deception directly, but rather measures the relative allocation of psychological significance (or threat perception) the subject assigns to the relevant versus the control questions.

A significant psychological component of the CQT is the concept of psychological set, which is heavily manipulated during the pre-test interview. The examiner must ensure the guilty subject believes the relevant questions are the most threatening, and the innocent subject believes the control questions are the most dangerous. This manipulation is critical because the CQT is highly sensitive to external variables, including the subject's emotional state, belief in the test, and potential countermeasures. If the psychological set is not established correctly, the differential response may not occur, leading to inconclusive or inaccurate results. This reliance on the examiner's skill in psychological manipulation is a major point of contention among scientific critics.

7. Debates and Criticisms

The Control Question Test faces extensive scientific and legal criticism regarding its validity and reliability. The primary debate centers on whether the physiological differences observed actually reflect deception or merely reflect differences in the emotional salience of the questions, which can be influenced by factors other than guilt. The National Academy of Sciences (NAS) has concluded that CQT polygraph testing lacks adequate scientific support for its validity, particularly when used in high-stakes security screening.

One fundamental flaw is the assumption underlying the CQT: that a truthful subject will always be more worried about the vague control questions than the relevant questions, and vice versa for the

deceptive subject. Critics argue that an innocent subject facing a serious criminal accusation (e.g., murder) will likely be far more stressed by the relevant questions, regardless of their innocence, leading to a high rate of ****false positives**** (NDI incorrectly scored as DI). Conversely, a sophisticated deceptive subject may employ ****countermeasures****--physical or mental techniques designed to artificially inflate their physiological responses to the control questions or suppress their responses to the relevant questions--thereby generating a ****false negative**** result (DI incorrectly scored as NDI).

Furthermore, the subjectivity inherent in the CQT process remains a major concern. The creation of the control questions, the manipulation during the pre-test interview, and even the final scoring often require significant subjective judgment from the examiner. Unlike objective tests measuring concealed information, the CQT is essentially a behavioral assessment relying on the examiner's ability to create and maintain specific psychological states in the subject, leading to variability in outcomes that is heavily influenced by the skills and biases of the specific polygraph operator rather than purely objective psychophysiology.

Further Reading

[Polygraph \(Wikipedia\)](#)

[The Truth About Lie Detectors \(Polygraph Tests\) - American Psychological Association \(APA\)](#)

[The Polygraph and Lie Detection \(National Academies of Sciences, Engineering, and Medicine Report\)](#)