

Welcome to  
**PTIP**

**Post-Test Information Package**

**Skill-Task Assessment #S-02 (2009)**

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This results package is prepared  
for the purpose of email  
feedback.

Please take the time to check all  
of your results on this trial.

**This Post-Test Information Package (PTIP)**  
**is part of the Skill-Task Assessment (STA) program provided by**  
**Skill-Task Training, Assessment and Research Inc. (ST<sup>2</sup>AR)**

An objective of **ST<sup>2</sup>AR** is to characterise skill and expertise associated with human perceptual and cognitive processes related to forensic opinion formation. Forensic handwriting identification is a discipline that uses these processes almost exclusively when determining the authorship of questioned writings.

The STA program involves a collaboration between Skill-Task Training, Assessment and Research, Inc. and the Forensic Expertise Profiling Laboratory (School of Human Biosciences, La Trobe University, Australia).



# The STA Program for Document Examiners

## Brief Background

Forensic handwriting examination can simply be regarded as a skill. The skill is applied to cases which vary according to the amount and complexity of both the questioned and specimen material. No one test will determine the validity of the skill. Over time, given sufficient trials, a picture of the skill for individuals should emerge. This will allow us to determine whether or not skills claimed by examiners are valid and reliable and will also allow us to estimate the potential error (misleading) rate for different types of examinations/comparisons.

## The Current Program

Participants are given the opportunity, annually, to express multiple blind trial opinions on signatures and/or handwriting. Participants can elect to be issued with a certificate of their results for a specific STA in terms of misleading, conservatism and correct scores. This certificate may be used to provide courts of law with information regarding forensic handwriting skills.

This package provides an overview and results of the 2009 STA trial (#S-02).

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# Part 1

Overview of the signature trial

# Overview of the Trial

Document examiners were required to compare 18 known (exemplar) signatures with 60 questioned signature samples where for each of the questioned samples the writer was known to the Test Administrator but not to the examiners. The questioned samples were a mixture of genuine signatures, disguised signatures and forged (simulated) signatures. Participants were required to express an opinion as to whether or not each of the questioned samples were written by the known writer (or whether they were unable to say).

All writings were made using the same make of ballpoint pen.

The name of the known writer was not provided to the forgers or to the participants.

# The questioned group contained the following signature types:

- 22 genuine signatures written by the known writer in their normal signature style
- 16 disguised signatures written by the known writer
- 22 simulated signatures (written by 8 forgers freehand simulating the signature characteristics of the known writer)

The 60 questioned samples were numbered randomly, scanned and photographically reproduced (one signature per photograph). A CD containing the scanned image files (pdf format) was also provided. The CD was provided so that examiners could view enlargements of the images if required.



# Preparation of the known writer's signatures

The known writer was provided with the pen and paper required to form their signature samples.

The known writer's genuine and disguised signatures consisted of requested signatures (i.e., exemplars) only.

The known writer's signatures were written over a 7 day period.

In addition to these signatures, the known writer provided an additional forty-two genuine signature samples (14 pages containing three signature samples per page). Signatures from this supplementary pool were provided to the forgers as examples of the signature they were required to simulate.

## The known writer's signatures

A randomized selection of the normal signature samples were used to form the 'known signatures' group . This group contained 18 signatures.

The randomized known signatures originated from a pool of 140 naturally written genuine signatures produced by the known writer over a 7 day period.  
(20/day over a 7 day period).

# Generation of the disguised signatures written by the known writer

The known writer was instructed to change or modify their normal signature in a fashion that they believe would permit the signature to pass a transaction point inspection (e.g., retail cashier) while at the same time providing a basis to later deny that they wrote the signatures.

# Generation of the disguised signatures written by the known writer

A randomized selection of the disguised signature samples were used to form the 'disguised signatures' group . This group contained 16 signatures.

The randomized disguised signatures originated from a pool of 35 disguised signatures produced by the known writer over a 7 day period. (5/day over a 7 day period).

## Generation of forged signature samples not written by the known writer

8 adult 'forgers' were used. These individuals were volunteers. Each of the forgers were provided with three (3) original samples of the known writer's normal signature.

Forgers were instructed that their forgeries must be unassisted (not tracings). Each forger was provided with a pen and a booklet. The booklet contained pages divided into spaces. These spaces were numbered 1 to 12. The forgers were asked to inspect the genuine signature(s) and produce 12 simulations daily. All of the forgers repeated this process for seven (7) days (generating a pool of 84 simulations each).

## Generation of forged signature samples not written by the known writer

A randomized selection of the 'forged' signature samples were used to form the group of questioned simulated signatures. This group contained 22 simulated signatures.

The randomized 'forged' signatures originated from a pool of 672 simulations (8 forgers produced 84 simulations each; 12 per day over a 7 day period).

## Generation of forged signature samples not written by the known writer

The following tables provide participants with a key as to the forger identity and the sequence of the simulations that were used in the trial material.

# Forgeries used in the trial material

| Questioned signature number | Forger identity | Practice signature |
|-----------------------------|-----------------|--------------------|
| 22                          | F1              | Day 6 – Sample 1   |
| 24                          | F1              | Day 3 – Sample 6   |
| 35                          | F1              | Day 6 – Sample 10  |
| 51                          | F1              | Day 2 – Sample 4   |
| 4                           | F2              | Day 6 – Sample 7   |
| 56                          | F2              | Day 1 – Sample 9   |
| 30                          | F3              | Day 7 – Sample 12  |
| 39                          | F3              | Day 7 – Sample 5   |
| 47                          | F3              | Day 3 – Sample 8   |
| 5                           | F4              | Day 5 – Sample 8   |
| 40                          | F4              | Day 3 – Sample 5   |
| 23                          | F5              | Day 2 – Sample 2   |
| 16                          | F6              | Day 3 – Sample 1   |
| 21                          | F6              | Day 1 – Sample 5   |
| 25                          | F6              | Day 1 – Sample 9   |
| 32                          | F6              | Day 1 – Sample 4   |
| 34                          | F6              | Day 4 – Sample 5   |
| 37                          | F7              | Day 7 – Sample 8   |
| 38                          | F7              | Day 3 – Sample 2   |
| 54                          | F7              | Day 5 – Sample 7   |
| 50                          | F8              | Day 6 – Sample 8   |
| 53                          | F8              | Day 2 – Sample 9   |



# Who Participated

Thirty-seven (37) FDEs participated in this trial.

In all, 19 answer booklets were submitted for analysis (containing the opinions of 28 examiners). These booklets represented:

- 8 peer reviewed responses
  - 7 groups of two
  - 1 group of three (included a trainee)
- 11 individual responses (includes a trainee)

The peer review responses are represented by the symbol ‘/’ between the individual participant codes (e.g., x/y represents the opinions of examiner “x” peer reviewed by examiner “y”).

Nine (9) participants declined to submit an answer booklet.

# Participant Demographics

- Of the participants that submitted an answer booklet, all but ten (10) declared themselves to be a member of one or more of the following professional organizations:
  - American Academy of Forensic Sciences (Questioned Document section)
  - American Society of Questioned Document Examiners
  - Australian and New Zealand Forensic Science Society
  - Canadian Society of Forensic Sciences (Questioned Document section)
  - Forensic Science Society
  - International Association for Identification
  - International Graphonomics Society
  - Midwestern Association of Forensic Scientists
  - Southeastern Association of Forensic Document Examiners
  - Southwestern Association of Forensic Document Examiners
- Ten (10) of the participants did not disclose membership(s) in any forensic related professional organizations.

# Participant Demographics

- Of the participants that submitted answer booklets (N=28), their primary employment as a FDE was declared to be:

| Local | State | Federal | Private |
|-------|-------|---------|---------|
| 1     | 12    | 10      | 5       |

# Participant Demographics

- Of the participants that submitted answer booklets (N=28), their years of experience as a FDE was declared to be:

| <1 yr.<br>(Trainee) | 1-5 yrs | 6-10 yrs | 11-15 yrs | 16-20 yrs | 21-25 yrs | >26 yrs |
|---------------------|---------|----------|-----------|-----------|-----------|---------|
| 2                   | 6       | 2        | 3         | 5         | 4         | 6       |

# Instructions to Participants

Participants were provided with commercially printed photographs of scanned (600 dpi) original known and questioned signatures, a CD containing pdf files of each of the scanned images, and an answer booklet. Examiners were informed that the date range over which the questioned signatures was taken was around the time that the known signatures were written. They were asked to compare each questioned signature with the known signatures and express an authorship opinion using the answer booklet provided.

The name of the known writer was intentionally not provided to the participants.

# The Answer Booklet

This comprised 60 lines, each line corresponding to one of the questioned samples. On each line participants were required to write the number corresponding to the coded opinion response (1, 2, 3, 4, or 5).

# Definition of Answers

## Authorship

The one digit answer code for each of the questioned signatures refers to the authorship opinion. This digit was either a 1, 2, 3, 4 or 5. The levels examiners had to choose from were :

- 1. The questioned signature **was written by** the writer of the signature specimens. This is an opinion of ‘moral certainty’ on the part of the examiner. For some examiners this opinion level translates into *‘very strong support for the proposition that the questioned signature was written by the writer of the signature specimens’*.
- 2. There are indications that the questioned signature **was written by** the writer of the signature specimens. For some examiners this opinion translates to statements such as *‘moderate support for the proposition that the questioned signature was written by the writer of the signature specimens’* or *‘it is probable that the questioned signature was written by the writer of the signature specimens’*.
- 3. **No opinion** can be expressed as to whether or not the questioned signature was written by the writer of the signature specimens. *This is an inconclusive opinion.*
- 4. There are indications that the questioned signature **was not written by** the writer of the signature specimens. For some examiners this opinion translates to statements such as *‘moderate support for the proposition that the questioned signature was not written by the writer of the signature specimens’* or *‘it is probable that the questioned signature was not written by the writer of the signature specimens’*.
- 5. The questioned signature **was not written by** the writer of the signature specimens. This is an opinion of ‘moral certainty’ on the part of the examiner. For some examiners this opinion level translates into *‘very strong support for the proposition that the questioned signature was not written by the writer of the signature specimens’*.

# Definition of Score Categories Regarding Authorship Opinions

Examiners' authorship responses (opinion units) were marked as correct, misleading or inconclusive. These marks were then analysed to produce scores for each of the different questioned signature types (genuine, disguised by specimen writer or simulations not by specimen writer). The scores are presented as numbers of opinions or as percentages which represent opinion rates. The following definitions of the score categories are used in subsequent results tables in this report.

## # Correct

The number of authorship opinions that were correct.

## # Misleading

The number of authorship opinions that were misleading (i.e., erroneous).

## # Inconclusive

The number of authorship opinions that were inconclusive.



# Definition of Score Categories

## Authorship Opinions (Cont.)

### % Correct

The number of correct authorship opinions divided by the total number of all authorship opinions, to include inconclusive opinions (expressed as a percentage) .

### % Misleading

The number of misleading authorship opinions divided by the total number of all authorship opinions, to include inconclusive opinions (expressed as a percentage).

### % Inconclusive

The number of inconclusive authorship opinions divided by the total number of all authorship opinions (expressed as a percentage).

(The inverse of the “% inconclusive” will reflect the overall “% called” rate.)

# Definition of Score Categories Regarding Authorship Opinions (Cont.)

## % Correct called (% Cc)

The number of correct authorship opinions divided by the sum of the correct and misleading authorship opinions (expressed as a percentage).

## % Misleading called (% Mc)

The number of misleading authorship opinions divided by the sum of the correct and misleading authorship opinions (expressed as a percentage).

The 'called' scores do not include inconclusive opinions and therefore equate to a number that reflects the opinion rate when an examiner is expressing an opinion that is other than inconclusive.

# Part 2.1

Authorship group results

# Authorship group results

A total of 1140 comparisons were conducted in this trial.

692 called opinions (60.7%) were expressed and 448 (39.3%) comparisons were inconclusive.

Overall, 664 opinions (58.3%) were correct and 28 opinions (2.5%) were misleading.

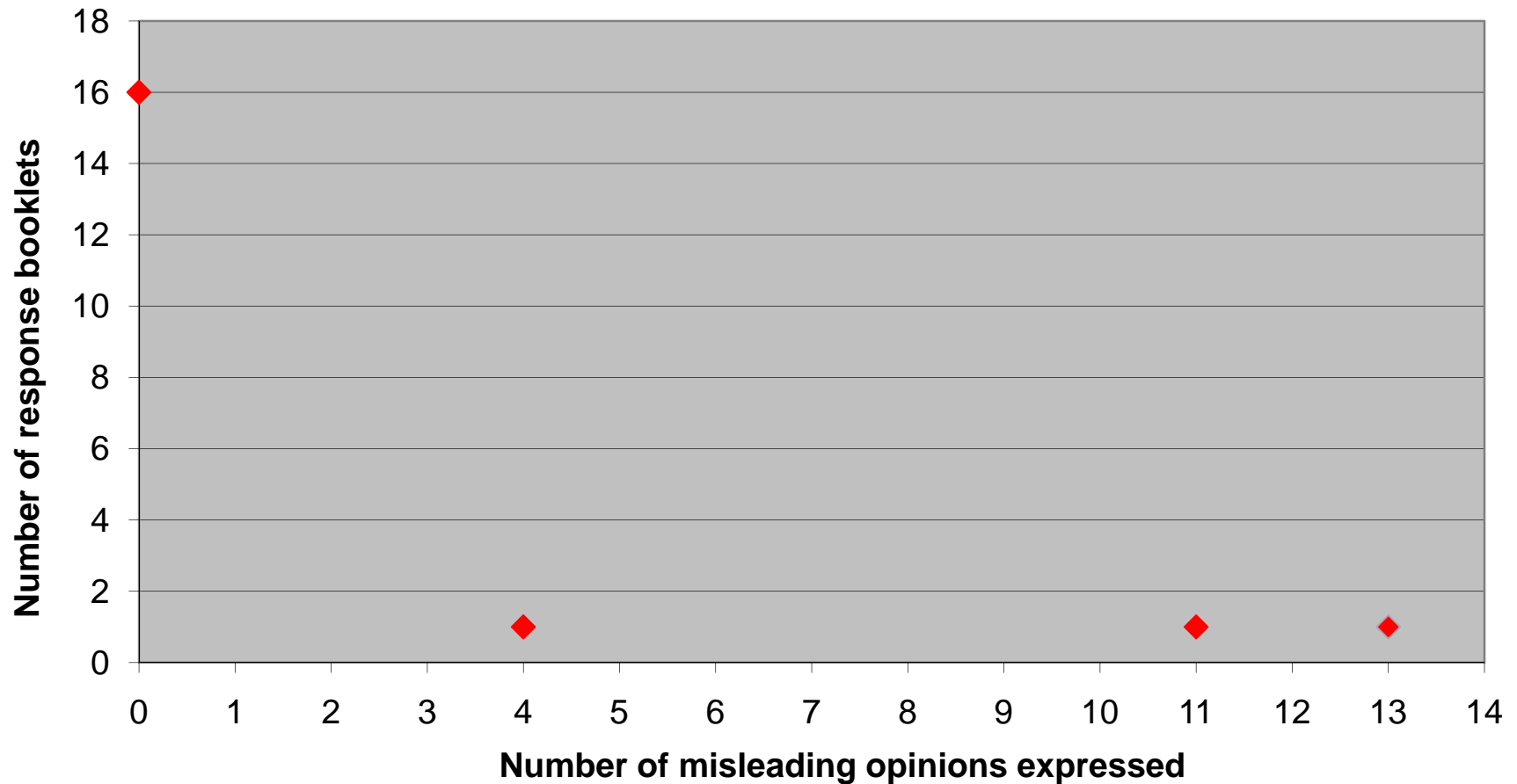
In terms of called opinions only, the 28 misleading opinions translates into 4.0% of called opinions and 664 correct opinions translates into 96.0% of called opinions by the group.

# Authorship group results

While the overall group scores are interesting to consider, inter-examiner variation in opinions expressed for different categories of questioned writing can, and in this trial did, vary widely.

High inter-examiner variations means that overall group scores will not be a good measure of individual performance in this trial. The extent of inter-examiner variation should be assessed by inspecting the total number of correct, misleading and inconclusive opinions expressed by each of the participants, and for each of the various writing types (e.g., genuine, disguise, and simulation).

# Total number of misleading authorship opinions expressed by response booklet

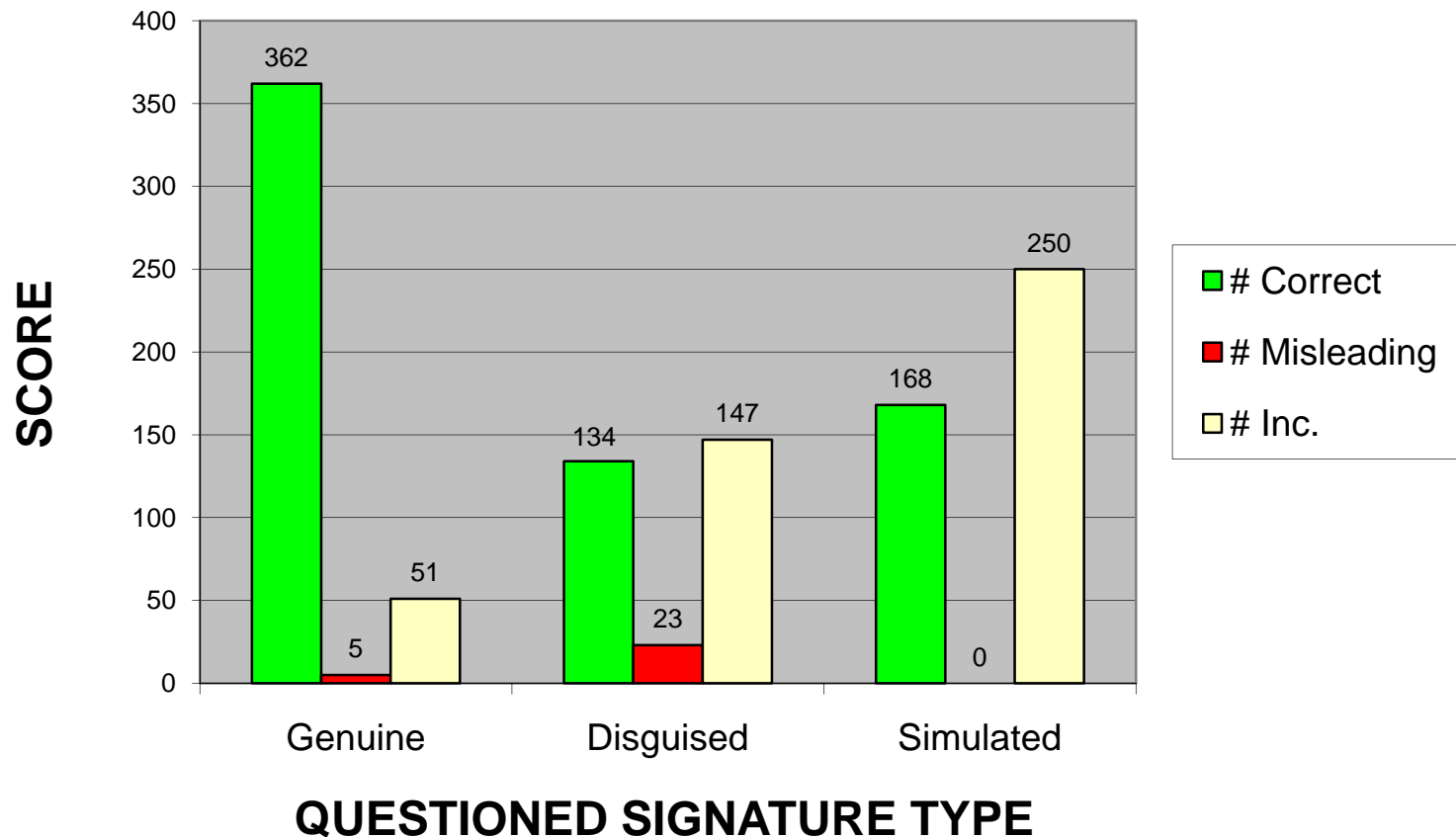


As can be observed, only three (3) answer booklets contained misleading opinions.

Sixteen (16) answer booklets did not contain any misleading opinions.

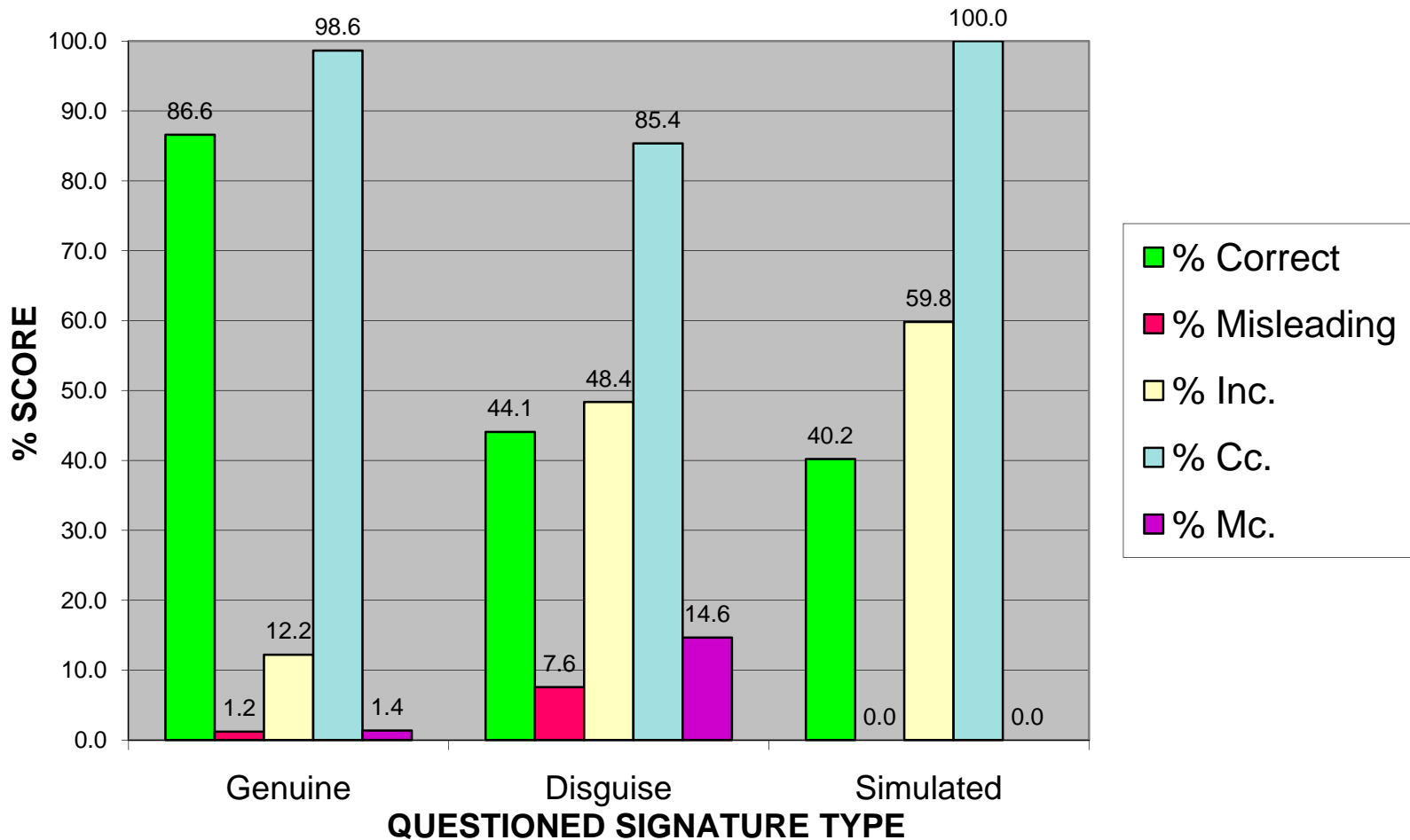
## Group Authorship Results

Examiners' opinions (raw data) regarding the authorship of each of the questioned signature types (Genuine, Disguised and Simulated). This data does not include levels of opinion.



# Group Authorship Results

Percentage scores for examiners' opinions regarding the authorship of each of the questioned signature types. This data does not include levels of opinion.  
Inc. = Inconclusive, Cc = Correct called and Mc = Misleading called.





## Part 2.2

Group results by participant type

The response booklets can be sorted into two types; single expert only responses (N=12) and peer review only responses (N=7).

The following tables represent the scores for each of the response booklet types for each of the questioned signature types (genuine, disguised and simulated)

Authorship opinions regarding the questioned **genuine** signatures

|              | Single experts<br>only<br>(N=12) | Peer review<br>only<br>(N=7) |
|--------------|----------------------------------|------------------------------|
| # Correct    | 215                              | 147                          |
| # Misleading | 5                                | 0                            |
| # Inc.       | 22                               | 29                           |
| % Correct    | 88.8                             | 83.5                         |
| % Misleading | 2.1                              | 0                            |
| % Inc.       | 9.1                              | 16.5                         |
| % Cc.        | 97.7                             | 100                          |
| % Mc.        | 2.3                              | 0                            |

As can be observed, the small number of misleading opinions expressed for this category of signature all came from non-peer reviewed booklets.

Authorship opinions regarding the questioned **disguised** signatures

|              | Single experts<br>only<br>(N=12) | Peer review<br>only<br>(N=7) |
|--------------|----------------------------------|------------------------------|
| # Correct    | 101                              | 33                           |
| # Misleading | <b>23</b>                        | 0                            |
| # Inc.       | 52                               | 95                           |
| % Correct    | 57.4                             | 25.8                         |
| % Misleading | 13.1                             | 0                            |
| % Inc.       | <b>29.6</b>                      | <b>74.2</b>                  |
| % Cc.        | 81.5                             | 100                          |
| % Mc.        | 18.5                             | 0                            |

As can be observed, all of the misleading opinions expressed for this category of signature came from non-peer reviewed booklets.

Authorship opinions regarding the questioned **simulated** signatures

|              | Single experts<br>only<br>(N=12) | Peer review<br>only<br>(N=7) |
|--------------|----------------------------------|------------------------------|
| # Correct    | 166                              | 2                            |
| # Misleading | 0                                | 0                            |
| # Inc.       | 76                               | 174                          |
| % Correct    | 68.6                             | 1.1                          |
| % Misleading | 0                                | 0                            |
| % Inc.       | 31.4                             | 98.9                         |
| % Cc.        | 100                              | 100                          |
| % Mc.        | 0                                | 0                            |

The ‘peer review’ responses for this category of signature produced more conservative results (higher % inconclusive) compared to the non-peer reviewed responses.

# Part 3

## Individual\* authorship opinion results

\* Peer review answer booklets are treated as single responses for these analyses

## Individual Results

Authorship opinions regarding the questioned **genuine** signatures

| Participant # | 1  | 2  | 3 | 4 | 5 | Totals | # Correct | # Misleading | # Inc. | % Corr. | % Mis. | % Inc. | % Cc. | % Mc. |
|---------------|----|----|---|---|---|--------|-----------|--------------|--------|---------|--------|--------|-------|-------|
| 7             | 22 | 0  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 20            | 12 | 6  | 2 | 2 | 0 | 22     | 18        | 2            | 2      | 81.8    | 9.1    | 9.1    | 90.0  | 10.0  |
| 24*           | 15 | 7  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 25            | 3  | 9  | 8 | 1 | 1 | 22     | 12        | 2            | 8      | 54.5    | 9.1    | 36.4   | 85.7  | 14.3  |
| 26            | 11 | 8  | 3 | 0 | 0 | 22     | 19        | 0            | 3      | 86.4    | 0      | 13.6   | 100   | 0     |
| 27            | 22 | 0  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 28            | 0  | 22 | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 31            | 10 | 6  | 5 | 1 | 0 | 22     | 16        | 1            | 5      | 72.7    | 4.5    | 22.7   | 94.1  | 5.9   |
| 39            | 19 | 3  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 41            | 0  | 18 | 4 | 0 | 0 | 22     | 18        | 0            | 4      | 81.8    | 0      | 18.2   | 100   | 0     |
| 50            | 19 | 3  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 51/52         | 13 | 0  | 9 | 0 | 0 | 22     | 13        | 0            | 9      | 59.1    | 0      | 40.9   | 100   | 0     |
| 10/22         | 21 | 1  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 12/11         | 18 | 4  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 15/13/36*     | 5  | 10 | 7 | 0 | 0 | 22     | 15        | 0            | 7      | 68.2    | 0      | 31.8   | 100   | 0     |
| 34/16         | 14 | 6  | 2 | 0 | 0 | 22     | 20        | 0            | 2      | 90.9    | 0      | 9.1    | 100   | 0     |
| 35/14         | 19 | 3  | 0 | 0 | 0 | 22     | 22        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 37/38         | 13 | 0  | 9 | 0 | 0 | 22     | 13        | 0            | 9      | 59.1    | 0      | 40.9   | 100   | 0     |
| 48/49         | 15 | 5  | 2 | 0 | 0 | 22     | 20        | 0            | 2      | 90.9    | 0      | 9.1    | 100   | 0     |

The scores in the green columns, under code “1” or “2,” represent the number correct authorship responses given by each participant. Scores in the yellow column, under code “3,” represent the number of inconclusive authorship responses given by each participant. Scores in the purple/red columns, under code “4” or “5,” represent the number of misleading authorship responses given by each participant.

\* FDE Trainee

## Individual Results

### Authorship opinions regarding the questioned **disguised** signatures

| Participant # | 1  | 2  | 3  | 4 | 5 | Totals | # Correct | # Misleading | # Inc. | % Corr. | % Mis. | % Inc. | % Cc. | % Mc. |
|---------------|----|----|----|---|---|--------|-----------|--------------|--------|---------|--------|--------|-------|-------|
| 7             | 13 | 3  | 0  | 0 | 0 | 16     | 16        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 20            | 0  | 5  | 9  | 1 | 1 | 16     | 5         | 2            | 9      | 31.3    | 12.5   | 56.3   | 71.4  | 28.6  |
| 24*           | 1  | 13 | 2  | 0 | 0 | 16     | 14        | 0            | 2      | 87.5    | 0      | 12.5   | 100   | 0     |
| 25            | 0  | 0  | 7  | 2 | 7 | 16     | 0         | 9            | 7      | 0       | 56.3   | 43.8   | 0     | 100   |
| 26            | 0  | 0  | 16 | 0 | 0 | 16     | 0         | 0            | 16     | 0       | 0      | 100    | n/a   | n/a   |
| 27            | 16 | 0  | 0  | 0 | 0 | 16     | 16        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 28            | 0  | 13 | 3  | 0 | 0 | 16     | 13        | 0            | 3      | 81.3    | 0      | 18.8   | 100   | 0     |
| 31            | 0  | 2  | 2  | 5 | 7 | 16     | 2         | 12           | 2      | 12.5    | 75.0   | 12.5   | 14.3  | 85.7  |
| 39            | 4  | 12 | 0  | 0 | 0 | 16     | 16        | 0            | 0      | 100     | 0      | 0      | 100   | 0     |
| 41            | 0  | 7  | 9  | 0 | 0 | 16     | 7         | 0            | 9      | 43.8    | 0      | 56.3   | 100   | 0     |
| 50            | 9  | 3  | 4  | 0 | 0 | 16     | 12        | 0            | 4      | 75.0    | 0      | 25.0   | 100   | 0     |
| 51/52         | 0  | 0  | 16 | 0 | 0 | 16     | 0         | 0            | 16     | 0       | 0      | 100    | n/a   | n/a   |
| 10/22         | 1  | 12 | 3  | 0 | 0 | 16     | 13        | 0            | 3      | 81.3    | 0      | 18.8   | 100   | 0     |
| 12/11         | 1  | 5  | 10 | 0 | 0 | 16     | 6         | 0            | 10     | 37.5    | 0      | 62.5   | 100   | 0     |
| 15/13/36*     | 0  | 0  | 16 | 0 | 0 | 16     | 0         | 0            | 16     | 0       | 0      | 100    | n/a   | n/a   |
| 34/16         | 0  | 1  | 15 | 0 | 0 | 16     | 1         | 0            | 15     | 6.3     | 0      | 93.8   | 100   | 0     |
| 35/14         | 2  | 8  | 6  | 0 | 0 | 16     | 10        | 0            | 6      | 62.5    | 0      | 37.5   | 100   | 0     |
| 37/38         | 1  | 1  | 14 | 0 | 0 | 16     | 2         | 0            | 14     | 12.5    | 0      | 87.5   | 100   | 0     |
| 48/49         | 1  | 0  | 15 | 0 | 0 | 16     | 1         | 0            | 15     | 6.3     | 0      | 93.8   | 100   | 0     |

**The scores in the green columns, under code “1” or “2,” represent the number correct authorship responses given by each participant. Scores in the yellow column, under code “3,” represent the number of inconclusive authorship responses given by each participant. Scores in the purple/red columns, under code “4” or “5,” represent the number of misleading authorship responses given by each participant.**

\* FDE Trainee



## Individual Results

Authorship opinions regarding the questioned **simulated** signatures

| Participant # | 1 | 2 | 3  | 4  | 5  | Totals | # Correct | # Misleading | # Inc. | % Correct | % Misleading | % Inc. | % Cc. | % Mc. |
|---------------|---|---|----|----|----|--------|-----------|--------------|--------|-----------|--------------|--------|-------|-------|
| 7             | 0 | 0 | 6  | 1  | 15 | 22     | 16        | 0            | 6      | 72.7      | 0            | 27.3   | 100   | 0     |
| 20            | 0 | 0 | 5  | 12 | 5  | 22     | 17        | 0            | 5      | 77.3      | 0            | 22.7   | 100   | 0     |
| 24*           | 0 | 0 | 12 | 10 | 0  | 22     | 10        | 0            | 12     | 45.5      | 0            | 54.5   | 100   | 0     |
| 25            | 0 | 0 | 2  | 2  | 18 | 22     | 20        | 0            | 2      | 90.9      | 0            | 9.1    | 100   | 0     |
| 26            | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 27            | 0 | 0 | 0  | 0  | 22 | 22     | 22        | 0            | 0      | 100       | 0            | 0      | 100   | 0     |
| 28            | 0 | 0 | 1  | 21 | 0  | 22     | 21        | 0            | 1      | 95.5      | 0            | 4.5    | 100   | 0     |
| 31            | 0 | 0 | 0  | 0  | 22 | 22     | 22        | 0            | 0      | 100       | 0            | 0      | 100   | 0     |
| 39            | 0 | 0 | 2  | 12 | 8  | 22     | 20        | 0            | 2      | 90.9      | 0            | 9.1    | 100   | 0     |
| 41            | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 50            | 0 | 0 | 4  | 9  | 9  | 22     | 18        | 0            | 4      | 81.8      | 0            | 18.2   | 100   | 0     |
| 51/52         | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 10/22         | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 12/11         | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 15/13/36*     | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 34/16         | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 35/14         | 0 | 0 | 20 | 2  | 0  | 22     | 2         | 0            | 20     | 9.1       | 0            | 90.9   | 100   | 0     |
| 37/38         | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |
| 48/49         | 0 | 0 | 22 | 0  | 0  | 22     | 0         | 0            | 22     | 0         | 0            | 100    | n/a   | n/a   |

**The scores in the green columns, under code “4” or “5,” represent the number correct authorship responses given by each participant. Scores in the yellow column, under code “3,” represent the number of inconclusive authorship responses given by each participant. Scores in the purple/red columns, under code “1” or “2,” represent the number of misleading authorship responses given by each participant.**

\* FDE Trainee

# Part 4

Individual misleading opinions

## Assessing your authorship opinion results

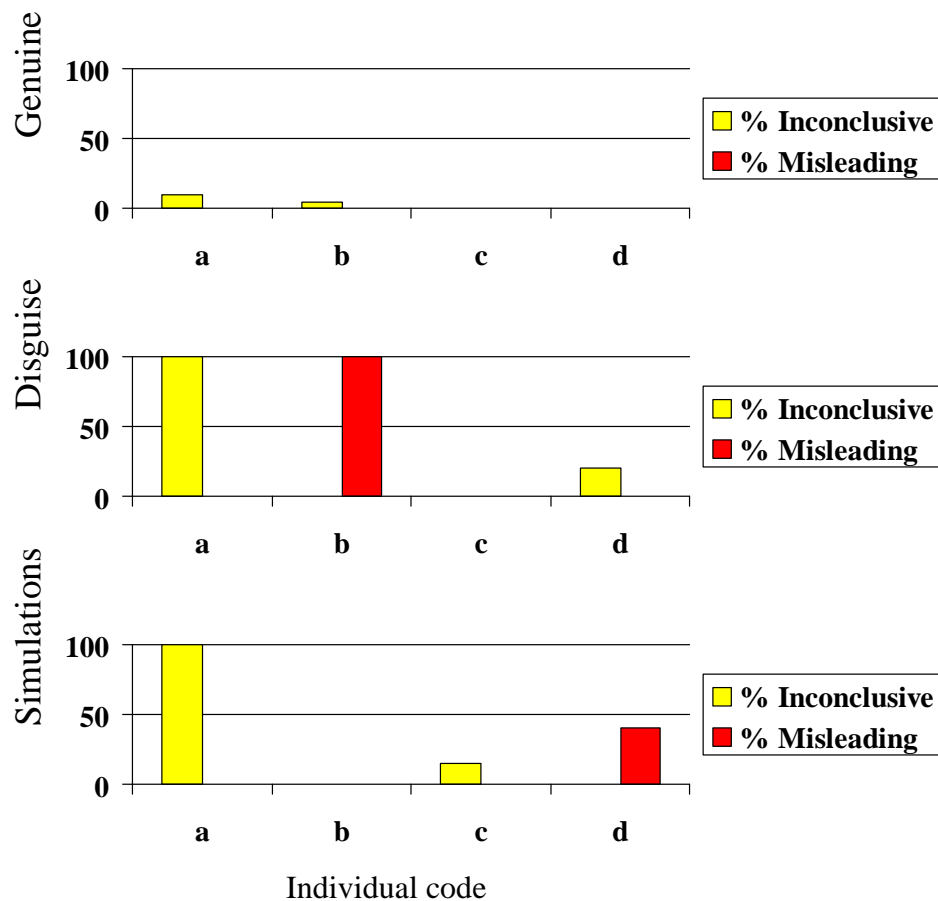
Now that you have viewed the group and individual correct, inconclusive and misleading responses for each of the questioned signature types (genuine, disguised and simulated) the relationship between the responses should be addressed, particularly if you have recorded misleading opinions and/or had an unusually low call rate (or, inversely, a high inconclusive rate) relative to the overall group rate.

The most effective approach to your self-assessment is to determine whether you considered any particular questioned signature to be ‘similar or ‘dissimilar’ with the specimen group. Genuine signatures should have been deemed to be similar to the specimen group. Simulated signatures should have been deemed dissimilar to the specimen group. Disguised signatures will vary in terms of the dissimilarity or similarity of features (compared to the specimen group) according to the method that the specimen writer adopts to change their signatures.

To assist you in further assessing your current skill we have provided graphs of individuals’ inconclusive and misleading rates for each of the questioned signature types (genuine, disguise and simulated). We have done this in order for you to assess whether apparent skill in determining the authorship of one questioned signature type (as may be evidenced by low misleading and low inconclusive scores) is real or not.

# Assessing your authorship opinion results (cont.).

## Example.



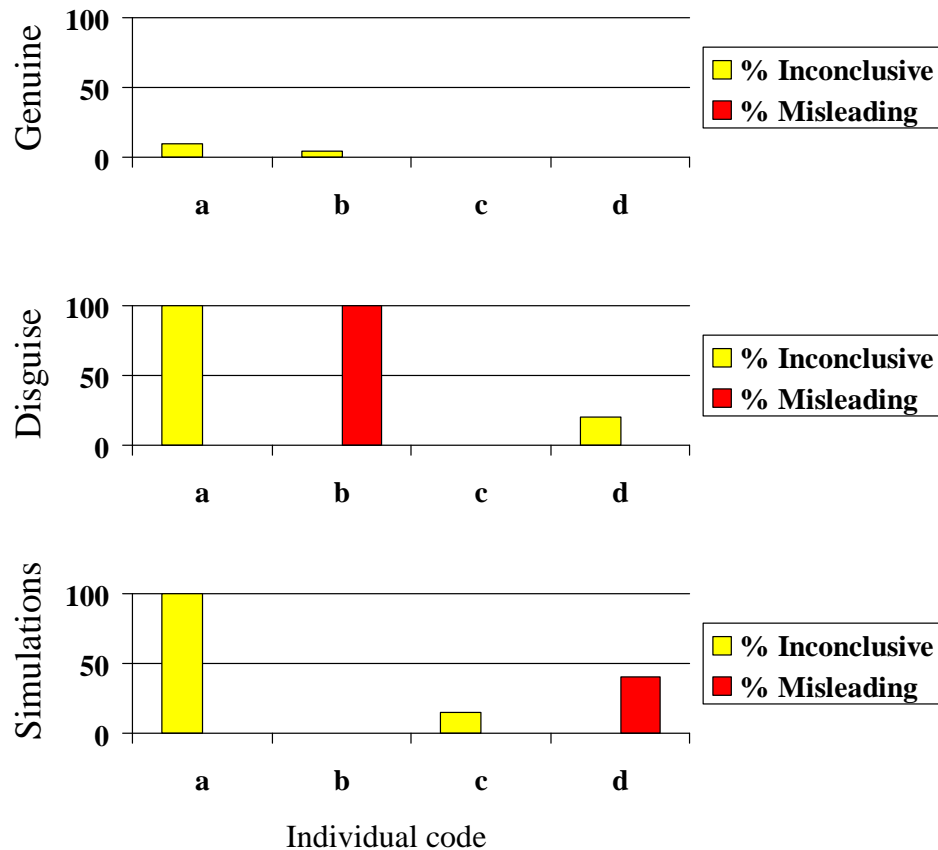
Here is an example , however, please note that this data does **NOT** come from this trial.

We have three graphs, corresponding to the three questioned signature types for four fictional examiners. Examiner 'a' has skill at identifying whether a signature is genuine (no misleading, low % inconclusive). This examiner may also have skill at determining whether a questioned signature is the product of a disguise or simulation process. In this trial this examiner is not displaying skill at determining the authorship of disguise or simulated signatures (high % inconclusive).

Examiner 'b' appears to have skill at identifying the authorship of both genuine and simulated signatures. This, however, has to be taken in context with their misleading on the disguised signature group. Examiner 'b' has a corresponding high % misleading for the disguised signatures. In reality Examiner 'b' is detecting a difference between both the disguised and simulated signatures, in comparison with the specimen group, and is concluding that the difference is associated with a different writer. This result therefore shows that Examiner 'b' does not possess skill at determining the authorship of either the disguise or simulated questioned signatures in spite of displaying no misleading opinions for the simulated signature group.

# Assessing your authorship opinion results (cont.).

## Example.



Examiner 'c' is displaying skill at determining the authorship of all 3 types of questioned signatures.

Examiner 'd' appears to be displaying a skill at determining the authorship of both the genuine and disguised signatures. However the high misleading score associated with the simulated signatures indicates that examiner is misinterpreting dissimilar features either by forming the incorrect opinion that the dissimilarities are the product of natural variation or are the product of a disguise process. Another way to think about this is that this examiner is placing too much weight on the similarities between the questioned and specimen signatures resulting in correct disguise opinions and misleading simulation opinions.

It should be noted that these examples are straightforward cases. Some participants expressed misleading opinions for more than one category of questioned signature and therefore their results are hybrids of these examples.

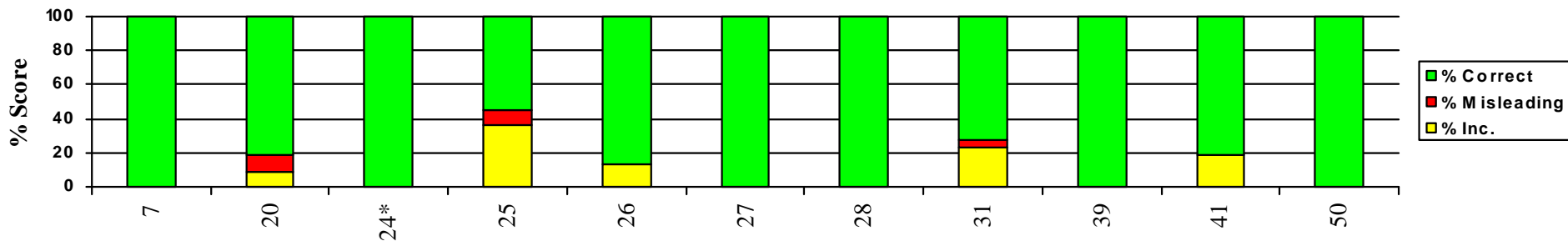
Participants are invited to assess the following graphs and, using this information, determine the likely source of the misleading opinions expressed.

The following graphs show examiner number versus % inconclusive (**yellow**), % correct (**green**) and % misleading opinions (**red**)

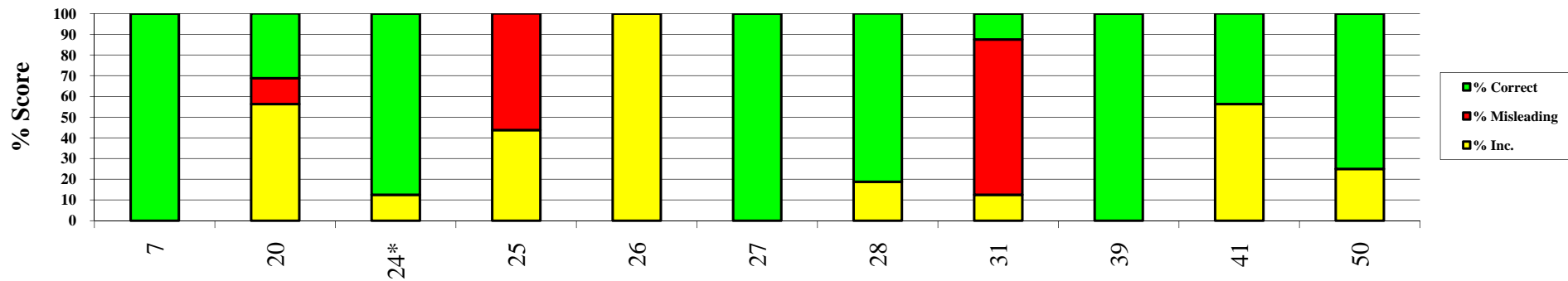
\*FDE Trainee

# Individual Participants

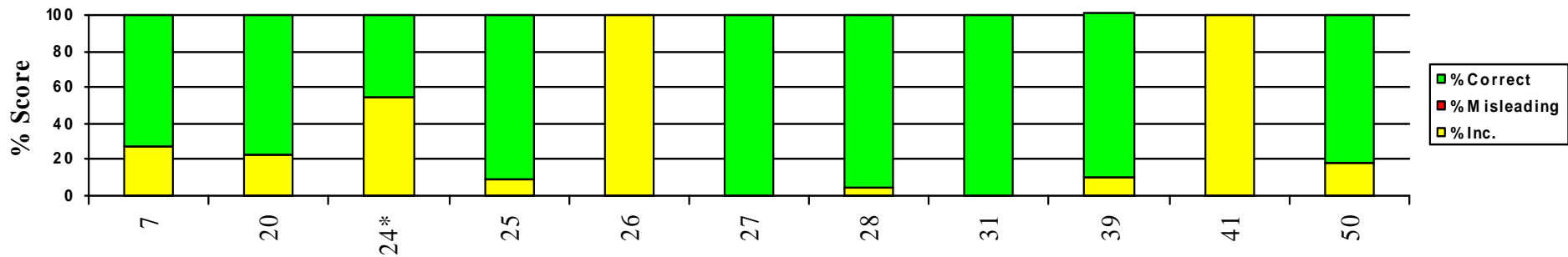
## Genuine



## Disguise

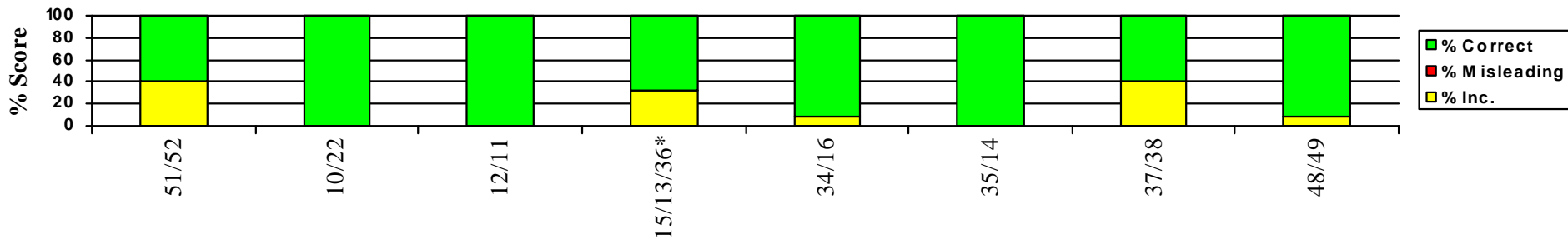


## Simulation

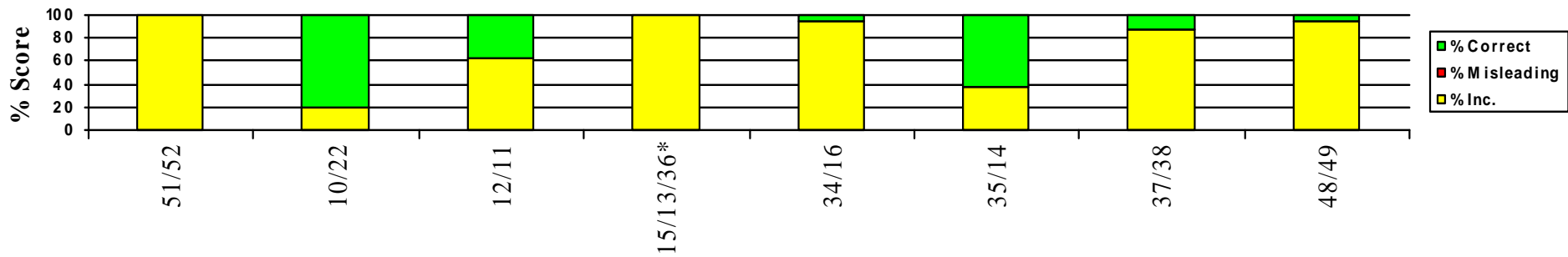


# Peer Review Groups

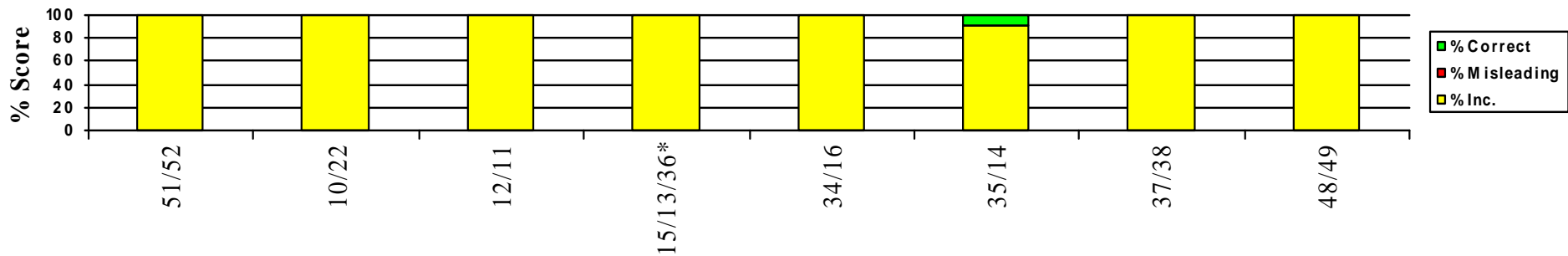
## Genuine



## Disguise



## Simulation

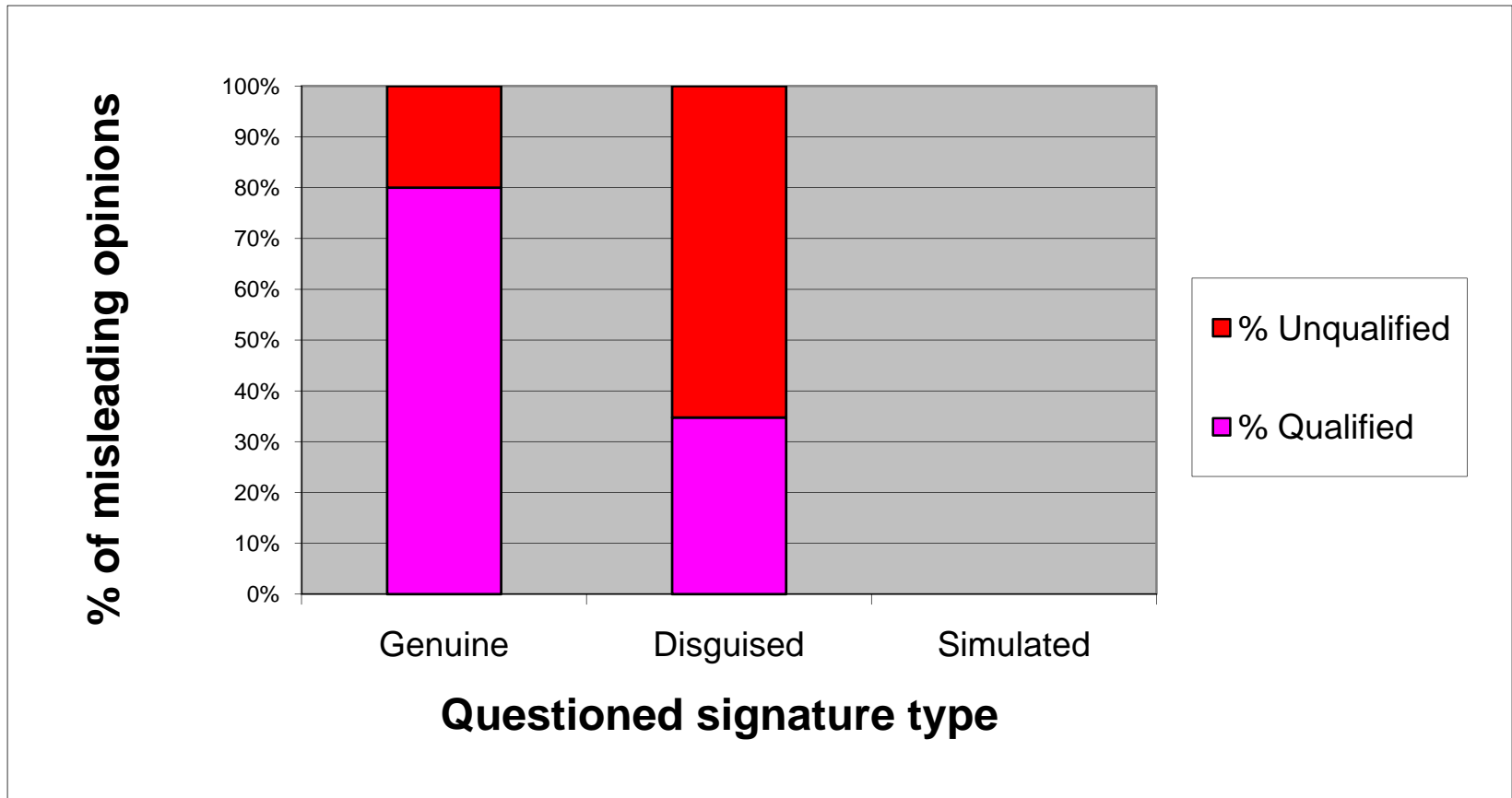




# Part 5

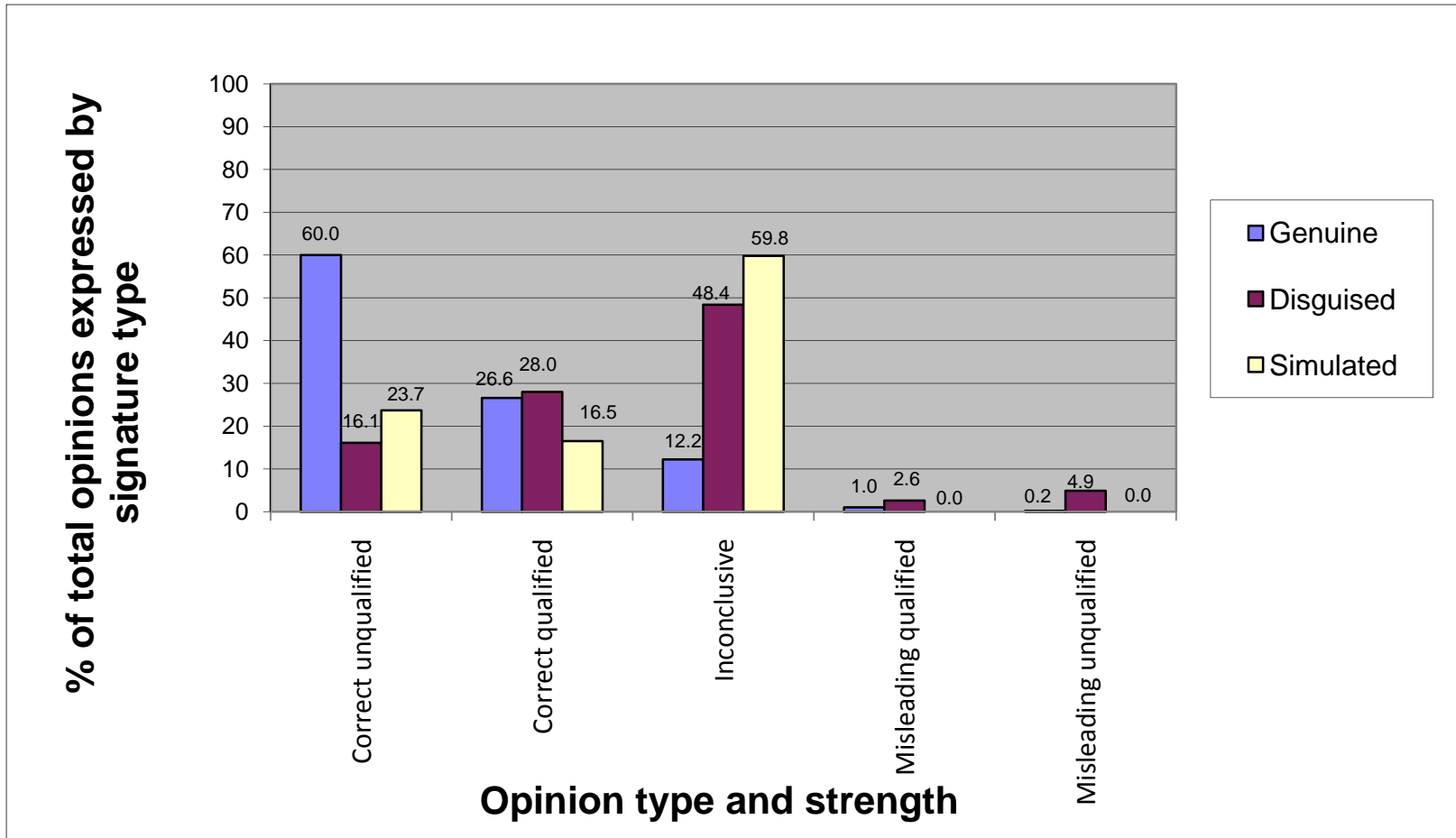
Other information

# Opinion strengths associated with misleading authorship opinions



As can be observed, no misleading opinions were expressed for the simulated signatures. For the genuine signatures, the majority of the misleading opinions that were expressed were 'qualified' opinions. In contrast, the majority of the misleading opinions that were expressed for the disguised signatures were 'unqualified' opinions.

# Profile of opinion type and strength for each of the categories of writing



If we consider all opinions expressed by the group, and compare the profile of each of the questioned signature types (genuine, disguised and simulated), it can be observed that opinions are more confidently expressed on the questioned genuine signatures than the simulated and disguised signatures. These results show, that as a group, examiners are either more cautious, or experience more difficulty, in determining the authorship of signatures that display dissimilar features when compared to the specimen material.

On what questioned signatures were misleading opinions expressed?

## For the genuine signatures

| Q # | # Correct | # Misleading | # Inc | % Correct | % Misleading | % Inc | %Cc  | %Mc  |
|-----|-----------|--------------|-------|-----------|--------------|-------|------|------|
| 3   | 15        | 2            | 2     | 78.9      | 10.5         | 10.5  | 88.2 | 11.8 |
| 31  | 12        | 1            | 6     | 63.2      | 5.3          | 31.6  | 92.3 | 7.7  |
| 45  | 18        | 1            | 0     | 94.7      | 5.3          | 0.0   | 94.7 | 5.3  |
| 60  | 13        | 1            | 5     | 68.4      | 5.3          | 26.3  | 92.9 | 7.1  |

## For the disguised signatures

| Q #       | # Correct | # Misleading | # Inc | % Correct | % Misleading | % Inc | %Cc  | %Mc  |
|-----------|-----------|--------------|-------|-----------|--------------|-------|------|------|
| <b>6</b>  | 6         | 2            | 11    | 31.6      | 10.5         | 57.9  | 75.0 | 25.0 |
| <b>7</b>  | 4         | 2            | 13    | 21.1      | 10.5         | 68.4  | 66.7 | 33.3 |
| <b>8</b>  | 9         | 2            | 8     | 47.4      | 10.5         | 42.1  | 81.8 | 18.2 |
| <b>9</b>  | 10        | 1            | 8     | 52.6      | 5.3          | 42.1  | 90.9 | 9.1  |
| <b>11</b> | 9         | 2            | 8     | 47.4      | 10.5         | 42.1  | 81.8 | 18.2 |
| <b>12</b> | 4         | 3            | 12    | 21.1      | 15.8         | 63.2  | 57.1 | 42.9 |
| <b>13</b> | 6         | 1            | 12    | 31.6      | 5.3          | 63.2  | 85.7 | 14.3 |
| <b>18</b> | 8         | 2            | 9     | 42.1      | 10.5         | 47.4  | 80.0 | 20.0 |
| <b>26</b> | 10        | 1            | 8     | 52.6      | 5.3          | 42.1  | 90.9 | 9.1  |
| <b>33</b> | 8         | 2            | 9     | 42.1      | 10.5         | 47.4  | 80.0 | 20.0 |
| <b>43</b> | 11        | 1            | 7     | 57.9      | 5.3          | 36.8  | 91.7 | 8.3  |
| <b>44</b> | 9         | 2            | 8     | 47.4      | 10.5         | 42.1  | 81.8 | 18.2 |
| <b>55</b> | 5         | 2            | 12    | 26.3      | 10.5         | 63.2  | 71.4 | 28.6 |

For the forged signatures

No misleading opinions were expressed

Should you wish to determine what your opinion was for any particular signature, either refer back to your original (or photocopy) answer booklet or refer to the file 'All raw answers' previously distributed via e-mail.



**We hope you have benefited from the trial.**

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