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STILL IN TOUCH: THE RELEVANCE OF FINGERPRINT TESTING AND EVIDENCE IN CRIMINAL CASES

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I. Introduction

1 For over a century in Singapore, fingerprints have been an essential identification tool in criminal cases.[2] But has fingerprint evidence become redundant and irrelevant? Other forms of evidence such as deoxyribonucleic acid ("DNA") serve similar forensic functions. And unlike fingerprints, DNA can be deposited by skins cells and hair. In this article, the authors conduct an empirical analysis of published decisions in the

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2 The Fingerprint Bureau, which obtained identification evidence in criminal cases, was set up in Singapore in 1903: A M Stuart, "Get A Clue: A Brief History of Fingerprints in the 19th Century" *Criminal Element* (5 August 2019) <https://www.criminalelement.com/19th-century-fingerprints> (accessed 16 February 2021).

Singapore courts,[3] which suggests a diminishing reference to fingerprint evidence since 1996.

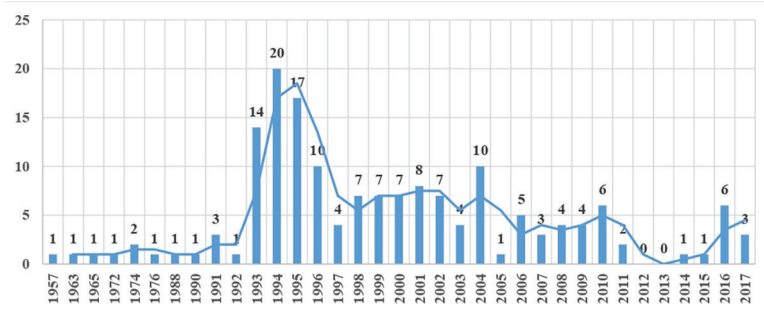
2 However, despite fingerprints' declining presence in decisions, the authors' survey of cases suggests that fingerprints remain of unique forensic value in the pre-trial investigatory context and highlighting the mental element of certain offences. Moreover, although the presence of fingerprint evidence is generally probative and its absence neutral, there are rare situations where the absence of fingerprint evidence can have exculpatory effects. This article highlights the continued usefulness of fingerprint evidence in the pre-investigative context for law enforcement. It also discusses why the absence of fingerprints at a crime scene rarely has an exculpatory effect.

II. Possible diminishing relevance of fingerprint evidence

A. Fingerprint evidence through the years

3 Figure 1 below suggests an initial increase in published decisions featuring fingerprint evidence up to 1994 and steadily reducing until 2004.[4]

Figure 1: Published Decisions Mentioning Fingerprints (1957–2017)



3 The list of published decisions, with their constituent variables used for the study, can be publicly assessed at <https://tinyurl.com/y34a2yvz> (accessed 1 February 2021).

4 The authors would caution that the increase (from 1993 to 1996) may simply reflect the general increase in publication when the Singapore judiciary began to take a concerted effort to publish its decisions.

4 However, this decrease in frequency may not necessarily mean that parties and the courts are no longer relying on fingerprint evidence. The converse may be true. As forensic fingerprinting became ubiquitous, the courts may have found it unnecessary to reference such evidence. The earliest published decision utilising fingerprint evidence was decades earlier in *Public Prosecutor v Toh Kee Huat*[5] in 1965. Hence, by the time publication of decisions became routine in 1993, fingerprint evidence may have already been accepted. The widespread use of fingerprints in trials meant that courts did not consider it necessary to reference this trite aspect of the forensic evidence in their decisions.

5 Moreover, accused persons may have considered it unfruitful to contest fingerprint evidence. In the US, the advent of fingerprint evidence was accompanied by the imprimatur of its authoritativeness and incontestability. As such, defendants increasingly chose not to challenge it.[6] Similar trends may well have occurred in Singapore. To date, the reliability of the Prosecution's fingerprint evidence has only been challenged (unsuccessfully) in two published decisions.[7] As Mnookin has reasoned with regard to the US, once the forensic reliability of fingerprint evidence appeared *irrebuttable*, fingerprint evidence also became *unrebutted* by defendants.[8] In that light, the Singapore courts may also have been less likely to reference unchallenged pieces of evidence in their written decisions.

5 [1965] MLJ 76. The authors note that there is an even earlier published decision in *Tan Kay Teck v The Attorney-General* [1957] MLJ 237. However, this decision did not pertain to the use of fingerprint evidence, but a suit for damages pertaining to wrongful detention.

6 Jennifer L Mnookin, "Fingerprint Evidence in an Age of DNA Profiling" (2001) 67(1) Brooklyn L Rev 13 at 17–20 and 42.

7 *Public Prosecutor v Ng Theng Shuang* [1994] SGHC 237 (affirmed in *Ng Theng Shuang v Public Prosecutor* [1995] 1 SLR(R) 407); *Tan Siew Chay v Public Prosecutor* [1993] 1 SLR(R) 267 at [98] and [99].

8 Jennifer L Mnookin, "Fingerprint Evidence in an Age of DNA Profiling" (2001) 67(1) Brooklyn L Rev 13 at 43.

B. Prevalence of DNA evidence

6 Another possible reason for the decline in the reliance on fingerprint evidence could be the advent of DNA evidence around 1996.[9] The emergence of DNA as an authoritative piece of forensic evidence may have led law enforcement to reduce its reliance on the use of fingerprints. In some cases, a physical element of an offence could equally be established by DNA evidence. For instance, while a fingerprint on drug bundles might help the Prosecution establish that the accused had possession (in the physical sense), the presence of DNA might equally serve that purpose. Hence, this may obviate the need to carry out *two* procedures – DNA swabbing and fingerprint dusting.

7 Moreover, although investigative techniques have been developed where it is possible to obtain a DNA sample from a fingerprint,[10] there can be trade-offs in sample collection. First, when DNA is obtained from a fingerprint sample, the sample will invariably contain contamination peaks. Second, and interrelatedly, extraction techniques may severely reduce the amount of obtainable DNA (by as much as 90%).[11] Third, because DNA retrieved from fingerprints tends to be in minute quantities, amplification procedures are necessary, which may lower the reliability of the DNA identification.[12] Fourth, and interrelatedly, fingerprint extraction will reduce the non-dusted surface area for DNA swabbing, which will mean that some of the sample will go uncollected.[13] All of the above trade-offs may suggest that fingerprints could be inclined to take a "backseat" to DNA in the forensic process.

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9 The first reported judgment concerning DNA evidence was in 1993 in the case of *Public Prosecutor v Muhamed Shah Bin Jantan* [1993] SGHC 220.

10 Roland AH van Oorschot, Kaye N Ballantyne & R John Mitchell, "Forensic Trace DNA: A Review" (2010) 1(14) *Investigative Genetics* 1 at 3.

11 Federica Alessandri *et al*, "Fingerprints as Evidence for a Genetic Profile: Morphological Study on Fingerprints and Analysis of Exogenous and Individual Factors Affecting DNA Typing" (2003) 48(3) *Journal of Forensic Science* 1 at 3.

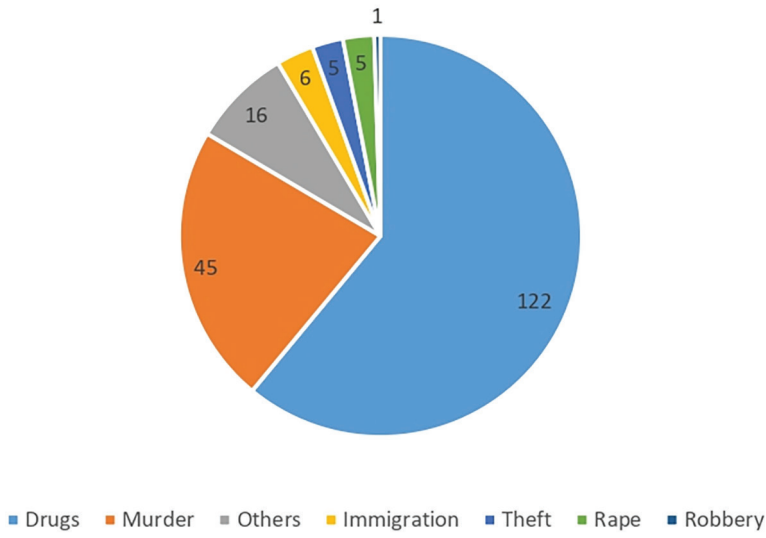
12 Jennifer J Raymond *et al*, "The Effect of Common Fingerprint Detection Techniques on the DNA Typing of Fingerprints Deposited on Different Surfaces" (2004) 54(1) *Journal of Forensic Investigation* 22 at 34–35.

13 Roland AH van Oorschot, Kaye N Ballantyne & R John Mitchell, "Forensic Trace DNA: A Review" (2010) 1(14) *Investigative Genetics* 1 at 3.

C. Prevalence of fingerprint evidence in drug offences

8 Figure 2 below illustrates that the majority (61%) of published decisions involved drug offences. After 2000, these drugs cases tapered off. There were no drug cases after 2002 where the Prosecution relied on fingerprint evidence to prove both the physical and mental elements of an offence (the same is not true for accused persons who continued to rely on the absence of fingerprints to suggest some exculpatory effect).

Figure 2: Breakdown of Decisions by Offence Types



9 The data may lend credence to the idea that DNA has overshadowed fingerprint evidence in drug cases. Some recent cases involving drug offences have relied heavily on DNA instead of fingerprint evidence. In *Public Prosecutor v Hishamrudin bin Mohd*,[14] the Prosecution relied on the presence of DNA in the interior of the bags containing the drugs. No reference was made to fingerprints. Similarly, in *Public Prosecutor v Jumaat bin Mohamed Sayed*,[15] the trial judge found that the DNA found

14 [2016] SGHC 56 at [14]. The decision was upheld in *Hishamrudin bin Mohd v Public Prosecutor* [2017] SGCA 41 at [23], with particular reference to the DNA evidence.

15 [2018] SGHC 176 at [44].

on the alleged drug moneys "inextricably" linked the accused person to the drug offences.[16] Again, the court did not refer to any fingerprint evidence.

III. Making the case for the continued relevance of fingerprints

10 Whilst the foregoing suggests that fingerprint evidence might have become otiose, this article begs to differ. In the following, the authors examine fingerprint evidence in the pre-trial context, its utility as to *mens rea*, and occasions where its absence might be probative.

A. Usefulness of fingerprint evidence in pre-trial context

11 A brief survey of the 15 published decisions involving fingerprints in the pre-trial context (*eg*, reliance on by the police or other enforcement authorities) suggests several uses.

12 Fingerprints are stereotypically thought to be useful in tracing unknown persons *from* the scene of the crime. This stereotype certainly does present itself in cases. In *Public Prosecutor v Robiul Bhoreshuddin Mondal*,[17] a rape victim could not identify her assailant. However, the accused's thumbprint was found on the doorknob to her room, ultimately enabling the authorities to apprehend him.[18]

13 Fingerprints are also popularly conceived of as helping to locate accused persons *at* crime scenes. In *Public Prosecutor v Abdul Nasir bin Amer Hamsah*[19] ("*Abdul Nasir*"), the accused killed the deceased during a robbery. His fingerprints were found on an envelope near the deceased's body and on her passport. But the case serves as caution that beyond locating an accused person at the scene, fingerprints may not have further probative value.

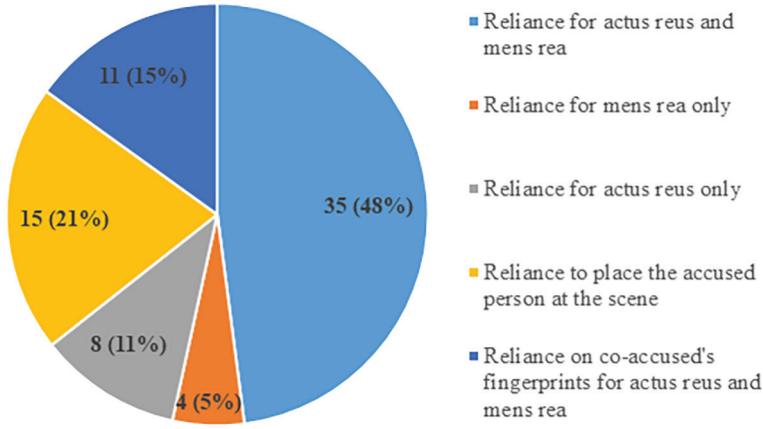
16 *Public Prosecutor v Jumaat bin Mohamed Sayed* [2018] SGHC 176 at [66].
17 [2010] SGHC 10.
18 *Public Prosecutor v Robiul Bhoreshuddin Mondal* [2010] SGHC 10 at [23] and [34]; see also *Public Prosecutor v Nordin Bin Ibrahim* [2016] SGDC 156 for another example where an accused person was located by fingerprints.
19 [1996] SGHC 138.

Indeed, the trial judge in *Abdul Nasir* rejected the Prosecution's reliance on the prints to prove the offence as "paltry, weak and controversial", as the injuries could have been inflicted by the co-accused, who was also present.[20]

14 But there are also other atypical uses for fingerprints. In *Public Prosecutor v Leong Siew Chor*, the accused dismembered his lover's corpse. The police were able to ascertain the deceased's identity from her fingerprints.[21] In *Public Prosecutor v Muhammad Radi bin M Said*,[22] fingerprints also proved crucial to identifying the deceased, as her body was in a badly decomposed state when it was found. Fingerprint evidence was therefore useful in locating the perpetrators of the murders.

B. Usefulness of fingerprint evidence in signalling mens rea

Figure 3: Breakdown of Cases where Prosecution Relied on Fingerprint Evidence by Type of Reliance (Physical and/or Mental Elements)



15 Out of the 83 published decisions where the Prosecution relied on fingerprint evidence, only 5% were targeted towards *mens rea* (Figure 3 above). However, this paints a part of the

20 *Public Prosecutor v Abdul Nasir bin Amer Hamsah* [1996] SGHC 138 at [3], [4] and [27].
21 *Public Prosecutor v Leong Siew Chor* [2006] 3 SLR(R) 290 at [30].
22 [1993] SGHC 260.

(quantitative) picture. A closer scrutiny suggests fingerprints may be uniquely useful as forensic evidence for highlighting the mental element of offences. The authors raise three examples.

(1) Fingerprints suggest cognisance when handling an exhibit

16 Fingerprints (as opposed to other forensic material) can sometimes be indicative of the mental element, because they signal purposeful intent in handling exhibits. This need not only be confined to drug offences. In *Public Prosecutor v Pramanik Liton*,[23] the accused's DNA and semen were found at the scene. His defence was that the intercourse was consensual. In that context, DNA alone might have been insufficient to secure a conviction. However, his thumbprint was also discovered on the blade of the knife that the victim claimed was pressed against her neck. The thumbprint, coupled with the victim's DNA on the blade, supported her account and proved an essential element of the offence of aggravated rape (*ie*, putting the fear of death in the victim) by showing that the weapon was wielded deliberately.

(2) Fingerprints suggest cognisance in terms of acknowledgement

17 The authors had earlier suggested that the Prosecution began to rely less on fingerprint evidence in drug cases after 2002 (see Figure 2 above). However, at the same time, the Prosecution began to rely on fingerprint evidence in a *different* type of case – immigration offences – highlighting the multifaceted nature of fingerprint evidence. Typical examples of such cases involve re-entry by illegal overstayers who had acknowledged immigrations bans by a thumb/fingerprint impression. Such prints connote the mental element the Prosecution relies on to establish these offences.[24]

23 [2017] SGHC 110.

24 See, for example, *Public Prosecutor v Xu Lihua* [2016] SGDC 187 and *Public Prosecutor v Lim Hean Nerng* [2006] SGDC 298.

18 Nevertheless, all this depends on context. In *Public Prosecutor v Liu Dandan*,[25] the accused was acquitted despite her fingerprint on a forged work pass. The court accepted her claim that she had unknowingly participated in a fingerprinting ruse and been misled into thinking that the work pass she had been given was genuine.[26] Hence, despite fingerprints' significance in immigration offences, they are not always determinative as to the outcome.

(3) Fingerprints highlight premeditation

19 Fingerprint evidence may also shape sentencing considerations, as it suggests evidence of premeditation or as a reason to afford less mitigating weight to a plea of guilt. In *Public Prosecutor v Chen Lin Yun*, the court noted that the accused's fingerprint showed she "had wrongfully and blatantly defied a … ban order", which was a factor justifying an uplift in sentence.[27] In *Public Prosecutor v Muhammad Nur bin Abdullah*,[28] the court gave little mitigating weight to the plea of guilt as the accused had been "caught red handed" by his fingerprints on the stolen motorcycle.[29] These cases may echo the findings of empirical studies elsewhere that the length of sentences is correlated with an *increase* when fingerprints are present, and a decrease when only DNA evidence is present. Briody suggests that this is because fingerprint evidence leads to "greater certainty about guilt".[30]

IV. Relevance of absence of fingerprint evidence

20 The foregoing discussion demonstrates the utility of the *presence* of fingerprint evidence. But what about its *absence*?

25 [2016] SGDC 73.
26 *Public Prosecutor v Liu Dandan* [2016] SGDC 73 at [37]–[40].
27 *Public Prosecutor v Chen Lin Yun* [2010] SGDC 452 at [70]; see also *Public Prosecutor v Xiao Jie* [2002] SGDC 178 at [10].
28 [2016] SGDC 232.
29 *Muhammad Nur bin Abdullah* at [15] and [25].
30 Michael Briody, "The Effects of DNA Evidence on Homicide Cases in Court" (2004) 37(2) *Australian & New Zealand Journal of Criminology* 231 at 249, in relation to an increase of three months in sentences for manslaughter cases where fingerprint evidence is present, and a decrease of five months where only DNA evidence is present.

21 Figures 4 and 5 below show that in the majority of published decisions (52.5% or 105 out of 200 decisions), fingerprint evidence was mentioned only because it was absent. In 37% of the decisions, the accused's fingerprints were present, and in another 10.5% of the decisions a co-accused person's fingerprints were present.

Figure 4: Presence and Absence of Fingerprint Evidence across Decisions

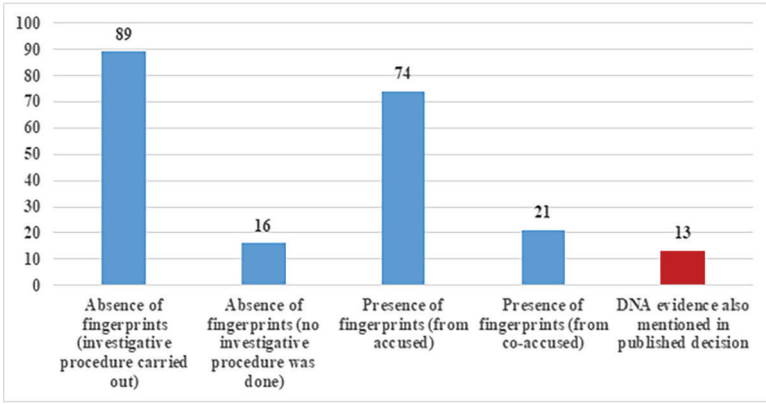
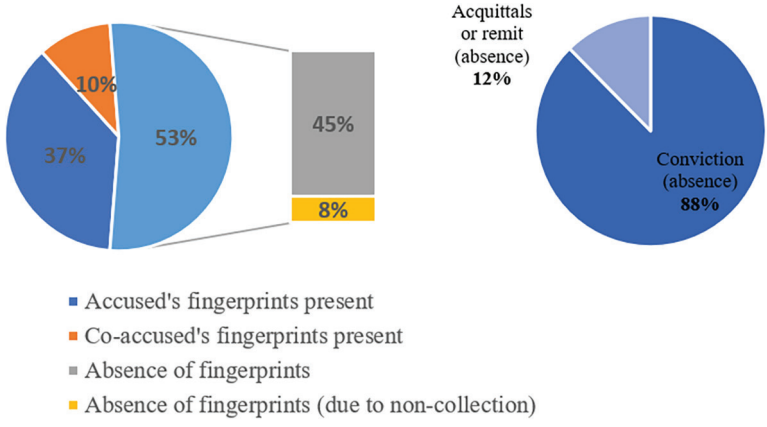


Figure 5: Absence of Fingerprint Evidence Contrasted to Convictions and Acquittals



A. The absence of fingerprints generally has limited exculpatory effect

22 In the majority of "absent" cases, accused persons often argued that the absence of their fingerprints at the scene or on the relevant exhibit should have exculpatory effect.[31] However, Figure 5 above illustrates that even when fingerprint evidence was absent, 88% of decisions nevertheless resulted in convictions (65 convictions at first instance, or 24 affirmations on appeal and three decisions with charges amended to a lesser charge).

23 What accounts for the high rate of convictions despite the lack of the accused's fingerprints (and the accused's attempt to rely on this absence)? The most obvious explanation for this is simply that contrary to popular belief, fingerprints are not necessarily left behind at a scene, and the mere absence of fingerprints does not mean the accused was not there. In some cases, an accused person could simply have taken preventive steps (*eg*, gloves).[32] Even when there is skin-to-surface contact, the texture, lack of body secretions, and print degradation can all lead to no prints or inconclusive prints.[33] This led the High Court in *Public Prosecutor v Wan Yue Kong* to observe that "[i]t is well known that a person who handles objects need not necessarily leave a finger impression on the object … the absence of [the accused person's] fingerprints in … the said exhibits does not assist him".[34]

24 This is true even when accused persons put a different spin on the evidence. Hence, the courts also consider it tenuous when an accused person relies on the *presence of another person's fingerprints* to suggest some exculpatory effect. In *Public Prosecutor Manogaran s/o R Ramu*,[35] the court rejected such arguments as

31 *Public Prosecutor v BNO* [2018] SGHC 243 at [45].
32 Federica Alessandri *et al*, "Fingerprints as Evidence for a Genetic Profile: Morphological Study on Fingerprints and Analysis of Exogenous and Individual Factors Affecting DNA Typing" (2003) 48(3) *Journal of Forensic Science* 1 at 1.
33 Chris Lennard, "Fingerprint Identification: How Far Have We Come?" (2013) 45(4) *Australian Journal of Forensic Science* 356 at 356–359.
34 *Public Prosecutor v Wan Yue Kong* [1999] SGHC 285 at [10.1].
35 [1997] SGHC 121 at [68].

untenable, observing that "what an offender could do to secure an acquittal is simply to let an unknown person handle the exhibits beforehand and take steps not to leave his fingerprints on the exhibits".

B. Law enforcement's decisions not to conduct fingerprint testing

25 The "absent" cases also highlight that fingerprint dusting may fail to produce a viable print even when dusting was carried out. Of the 89 decisions where fingerprints were absent, 45 involved situations where investigators dusted for fingerprints, but none were found, and in four of them, the investigators were unable to match the prints to anyone.[36]

26 But what about the cases (8% of decisions) where fingerprint evidence was absent as a result of the enforcement agencies' decision not to carry out fingerprint testing? Would the omission by law enforcement to carry out fingerprint testing prove material?

27 On the one hand, it is important to note that the collection of fingerprints is by no means mandatory for investigators. As the High Court observed in *Public Prosecutor v Yeo See How* ("*Yeo See How*"), "it is settled law that there is no primary or statutory obligation imposed on the prosecution that they should undertake fingerprint examination in situations such as [these]" (with reference to the fact that the accused was seen transporting the drugs).[37]

28 On the other hand, there are situations where the lack of viable latent prints or investigative failure may sometimes contribute to acquittals. In *Public Prosecutor v Ismil bin Kadar* ("*Ismil*"), the accused was convicted in part due to his confession when confronted that a fingerprint that was found might be his.[38] On appeal, the conviction was set aside and the Court of Appeal

36 No mention was made about investigatory decisions in 30 of these cases (*ie*, whether prints were dusted or not).
37 *Public Prosecutor v Yeo See How* [1996] SGHC 22 at [74].
38 *Public Prosecutor v Ismil bin Kadar* [2009] SGHC 84 at [42], [151] and [152].

had strong words for the investigating officer's "worrying lack of meticulousness in the discharge of his duties", given the officer's admission that he had not conducted fingerprint dusting at crucial places at the scene.[39] In *Yunani bin Abdul Hamid v Public Prosecutor*[40] ("*Yunani*"), V K Rajah JA directed criticism at the fact that although only a smudged fingerprint was adduced, the evidence was not sent for DNA analysis, despite the Central Narcotics Bureau's capability to do so. The accused was ultimately acquitted of the charge.[41]

29 Hence, while the absence of fingerprint evidence is *generally* irrelevant to the outcome of a trial, this is not invariably so. The authors would suggest that the exculpatory effect of the lack of fingerprint evidence is dependent entirely on context. In situations such as in *Yeo See How*, mere raising of the fact that investigators did not carry out dusting is, to put it plainly, a pointless exercise. The surrounding evidence more than sufficed to show the accused had possession. Conversely, in cases such as *Ismil* and *Yunani* where the Prosecution's case may have been circumstantial to begin with, the lack of fingerprint evidence may have been enough to tip the balance. The above suggests that the frequent reliance by accused persons on the absence of their fingerprints linking them to the crime is unlikely, without more to advance their defences very far when it is shorn of context.

C. Split decisions in joint liability cases

30 Of the 77 published decisions where fingerprint evidence was raised involving joint liability, a surprisingly significant percentage (30%) resulted in a "split decision" (where the ultimate outcome between the co-accused in terms of conviction or acquittal diverged).

31 Although the authors expected that in split decisions the fingerprints of the convicted accused person would be present, and his acquitted co-accused to be absent, this pattern was not

39 *Muhammad bin Kadar v Public Prosecutor* [2011] 3 SLR 1205 at [182].
40 [2008] 3 SLR(R) 383 at [38].
41 *Public Prosecutor v Yunani bin Abdul Hamid* [2008] SGDC 171 at [28].

evinced. In fact, in the only split decision where fingerprint evidence was present, it belonged to the *acquitted* co-accused.[42] Moreover, if a split decision occurred on appeal, it could often be attributed significantly to the review of fingerprint evidence.

32 These cases suggest that when the conviction of an accused person rests solely on the presence of the co-accused's fingerprints, it may be on tenuous ground. In *Yunani*, in the absence of the subsequently acquitted co-accused's fingerprints, all that remained was a guilty plea that was later retracted. In *Mohd Ariff bin Mat Rifin v Public Prosecutor*[43] ("*Mohd Arif*"), the Court of Appeal acknowledged that given the absence of the subsequently acquitted co-accused's fingerprints, the remaining evidence obtained via surveillance was faulty and insufficient to convict.

33 Another factor could be that split decisions often involved drugs offences, which are typified by syndication and involve co-accused collaborating, whether collectively or each sequentially (packing, transporting, negotiating). One co-accused might have been caught red-handed with the offending package on him and possession would be established for him. But the same is not true for his co-accused, for whom the Prosecution must still make the case for possession. On occasion, fingerprint evidence might bridge this gap, but when it is absent, and the remaining evidence is weak such as in *Mohd Arif*, the court may be unlikely to find the co-accused guilty, accounting for the split decision. This echoes the authors' observation above that the absence of fingerprint evidence tends to have exculpatory effect when the surrounding evidence is circumstantial to begin with.

V. Conclusion

34 This article's brief quantitative analysis suggests that fingerprint evidence retains its utility in the pre-investigative context, displays a uniqueness in highlighting *mens rea* for the purposes of securing a conviction, and assists in signalling

42 *Tan Chuan Ten v Public Prosecutor* [1997] 1 SLR(R) 666.
43 *Mohd Ariff bin Mat Rifin v Public Prosecutor* [1997] 3 SLR(R) 555.

premeditation for the purposes of enhancing a sentence. Fingerprints clearly have a role to play alongside other forensic material such as DNA and there may be utility in fingerprint dusting being carried out *in tandem* with DNA extraction in some situations, although much depends on the characteristics of the crime scene and the crime.

35 Although the absence of fingerprint evidence had a predictably small exculpatory effect, and there is no legal obligation on investigatory authorities to collect such evidence, such absence may prove determinative where the prevailing evidence against the accused (or co-accused in split decisions) is thin. Ultimately, the exculpatory effect of the absence of fingerprints is (as with most factual evidence) a contextual matter. Criminal practitioners would therefore do well to situate any lack of fingerprints in the light of all of the evidence, rather than raising it *in vacuo*.