

# IN THE SUPREME COURT OF BRITISH COLUMBIA

Citation: *R. v. Bornyk*,  
2017 BCSC 849

Date: 20170210  
Docket: X0-76411  
Registry: New Westminster

**Regina**

v.

**Timothy Dale Bornyk**

Before: The Honourable Mr. Justice Crawford

## Oral Reasons for Judgment

Counsel for the Crown:

A. Jantunen

Counsel for the Accused:

J. Ray  
C. Ng

Place and Date of Trial/Hearing:

New Westminster, B.C.  
January 23 - 27 & 30, 2017

Place and Date of Judgment:

New Westminster, B.C.  
February 10, 2017

### Introduction

[1] Mr. Bornyk is charged that on July 6-7, 2010, at or near Surrey, British Columbia, breaking and entering a dwelling house situated at 16988 83A Avenue and committing an indictable offence, to wit: theft, contrary to s. 348(1)(d) of the *Criminal Code*.

[2] The sole evidence against Mr. Bornyk is a latent fingerprint, found on a plastic wrapper around a cardboard box containing a collectible doll in Larry and Judy Porritt's house.

[3] In his defence, Mr. Bornyk attacks the opinions of two RCMP forensic identification specialists, both of whom say the partial latent print comes from the same source as a fingerprint taken of Mr. Bornyk's right ring finger later in July 2010. They drew on their training and experience in concluding that the partial latent print was identical to the print taken of Mr. Bornyk (the "source print").

[4] Fingerprint identification was, for the better part of two centuries, considered the best form of identification, due to the uniqueness of each person's fingerprints, but has come under fire in the last 15 years. I would infer from what I have read and the evidence before me that DNA evidence has, as a science, far surpassed the amount of certainty a fingerprint expert can have in identifying an accused.

[5] A fingerprint is subject to the interpretation of a fingerprint examiner's trained eye. A fingerprint examiner is trained to look at a fingerprint impression, note the distinctive features and compare it to a fingerprint taken from a known source.

[6] While I have no evidence on how a latent print from a crime scene is matched to a database, I might presume that computers match latent prints to a databank of potential sources, which are then compared by a fingerprint examiner.

[7] I was told that, according to best practices, an examiner should first look at a latent print and make bench notes of its characteristics. Then, the examiner should look at the source print(s) and determine whether there are sufficient like characteristics to opine whether the prints emanate from the same source. Alternatively, if the examiner views the comparison as inconclusive, the examiner can exclude the latent print as being from the person who gave the source print.

[8] In the case before me, the opinions of the two forensic identification specialists were not directly attacked. I did, however, hear from two outstanding experts in fingerprint forensic identification who gave evidence on the criticisms of fingerprint opinions proffered in the course of investigation and trial and on how forensic science has reacted to empirical studies and suggested best practices.

[9] In the remainder of this judgment, I will review the evidence and the arguments and state my conclusion.

## **The Evidence**

### **Kathy Virtanen**

[10] The initial evidence came from Mrs. Virtanen, the real estate agent retained to sell the Porritts' house on 83A Avenue in April 2010.

[11] Mrs. Virtanen described the Porritts' house as well maintained and "perfectly staged by the owner". The house was listed in two stages and eventually sold in January 2011.

[12] Mrs. Virtanen was scrupulous in taking persons through the house separately, either by appointment or during open houses, and staying in attendance with them.

[13] She said most buyers were Asian and known to her.

[14] She noted a small room near the front door where Mr. Porritt kept collectible items, like toys and figurines, on the shelves. She did not allow anyone in that room or allow anyone to touch any of the toys.

### **Constable Grant Bodnar**

[15] Constable Bodnar was called by a dispatcher on the morning of July 7, 2010 to attend at the Porritts' house. Roofers repairing the Porritts' roof had noticed the front and back doors had been broken. Constable Bodnar preserved the crime scene, noting the damage to the front and back doors.

[16] When another constable attended, they then went through the rooms, to check that no one was in the house. It was patent to Cst. Bodnar that the house had been ransacked. Items were strewn throughout, pictures on the walls were disturbed and doors and cupboards were open.

[17] The owners also attended and walked through the house. They did not touch anything.

[18] In cross-examination, Cst. Bodnar noted in his report to Crown Counsel he had forwarded a request to Cpl. Wolbeck for a full set of fingerprints from Mr. Bornyk. He did not know whether that was, in fact, done.

### **Larry Porritt**

[19] Mr. Porritt owned the house that was broken into as well as the toy collection from which the latent print was lifted. Because he and his wife had intended to have their roof repaired, they had turned off their alarm system, which the roofers' work would have set off. On the evening of July 6, 2010, they went to their cabin in Washington State. The next morning they were called by the police, who advised them that their house had been broken into.

[20] They identified various rooms in photographs of the house. The photos confirmed the patent ransacking of the house.

[21] With respect to the shrink-wrapped dolls in his doll collection, Mr. Porritt stated he had received a set of them and stored them on the top shelf. He had bought the dolls online, received them through the mail and hoped to resell them. He bought six at a time in the two years prior to 2010. He noted that one would need a stool to reach the dolls as they were kept eight feet off the ground. He stated that, in the few years he had owned the dolls, he might have handled them once or twice.

[22] Many other items were missing from the house including his wife's jewellery and various collectibles, art work and crystal worth some \$20,000-\$30,000. Mrs. Porritt's evidence was similar to Mr. Porritt's.

### **Erin McGreevy**

[23] Ms. McGreevy is a civilian member of the RCMP and is a certified Forensic Identification Assistant who has been with the Force since 2009.

[24] She walked through the house and photographed the crime scene. Of the potential surfaces on which a fingerprint could be found, including glass, plastic, photo frames, flower boxes, makeup, Tupperware, tables, doors and other furniture, only one fingerprint was found. She did not seize the metal rod found outside the front door. Ms. McGreevy did not examine other main floor items.

[25] She sent a photograph of the latent print to the BC Automated Fingerprint Identification System (“AFIS”) on July 7, 2010. She did not receive a response until May 4, 2011, when she received a C-216 Fingerprint Form (“the Form”) with the statement “may originate from Bornyk” dated July 21, 2010. She requested Mr. Bornyk’s fingerprints from the Surrey RCMP detachment and sent the Form to Cpl. Wolbeck so that he could compare the source print to the latent print.

[26] She agreed AFIS contains a large database of fingerprints, but did not know its internal workings.

### **Corporal Bradley Wolbeck**

[27] Corporal Wolbeck was qualified as an expert in locating, collecting, preserving, analysing, comparing and identifying fingerprints.

[28] He has a BA in Criminology and 16 years’ experience in forensic identification. He did his initial formal training in October 2006 and is now a trainer with the RCMP in Chilliwack. His Forensic Identification training began after he had spent six years in the RCMP. It involved crime scene searches, collection of evidence and being mentored on techniques for taking fingerprints. He learned how to find, mark and photograph crime scene prints and make notes concerning anatomy, features and the matrix underlying the fingerprint found in a crime site.

[29] In the summer of 2007, he joined the Forensic ID section, underwent an examination process and qualified, and then went to Ottawa for instruction on documenting crime scenes, taking photos, videos, sketches and measurements, searching for and finding physical evidence such as blood, DNA and footprints, and finding the source of such evidence and preserving it for court purposes if impression evidence was found. Part of the testing involved being shown fingerprint patterns and testing if he “had an eye” for the comparison process.

[30] During a three week suitability assessment, he marked examinations, gave evidence at trial, checked for reactions to chemicals and underwent a general assessment of his reactions and aptitude. He was also required to identify fingerprints using standard methodology. He was given 110 prints and had to take latent prints, analyse them and search for source prints. He successfully completed all 110 comparisons and identifications to Forms over eight weeks. A number of practical tests followed. He was not notified of any error in his work.

[31] He explained that fingerprint theory is based on friction ridge analysis. According to this theory, each person has a unique fingerprint. The primary concerns are the quality of the print and the quantitative features to be found therein. On a latent print, distortion can cause dissimilarity and difficulties in assessment.

[32] The RCMP’s system of fingerprint classification divides features into five, whorls, two forms of loops (ulnar and radial) and two forms of arches (tent and plain). A primary textbook is authored by David Ashbaugh. The RCMP system takes one through analysis comparison and a second verification assessment.

[33] He noted that digital photography has greatly enhanced analysts’ ability to take clear, high resolution

pictures of latent prints before lifting them. Digital imaging allows them to create greater background contrast and to clarify latent prints.

[34] His ongoing studies have included the potential life of fingerprints depending on their location, the persistence of fingerprints from birth to death and the fingerprints of identical twins, which interestingly showed that while they have similar DNA, they have unique, albeit similar, fingerprints. Corporal Wolbeck also described the way a baby develops his or her fingerprints in utero so that by birth the fingerprints are established and do not change.

[35] After returning from Ottawa, Cpl. Wolbeck worked on files in Langley, BC. He was further examined on four fingerprints and a cold search of 10 prints in a timed environment. He passed.

[36] He has since taken mandatory advanced forensic identification courses every two to three years and has met the proficiency standards. He was certified in March 2011 as a Forensic Identification Specialist.

[37] He indicated that he had attended some 1,100 crime scenes as a forensic investigative officer and located some 1,500 fingerprints. He said he has compared in excess of 1,000 fingerprints and had provided 490 opinions, all of which have been verified without exception.

[38] He stated that the RCMP's policy in 2011 was that if an officer made an error, he or she could be taken out of the identification section. More recently, the process has changed and become less harsh. Now, if an analyst makes an error, the error is reviewed. If the officer needs retraining, that officer might not be removed. The Force takes the potential of false identifications seriously, given the consequences of a wrongful conviction and potential loss of liberty.

[39] Corporal Wolbeck then gave evidence of his search of the Porritts' house. First, he walked through the Porritts' house while interviewing them. Then he looked for potential fingerprints. He confined his search for fingerprints to the main floor, while Ms. McGreevy went upstairs.

[40] Over the course of a search that lasted approximately two hours, he was unable to find friction ridge evidence on any surface except a partial print on a doll box located near the front door. He used black powder to obtain contrast and located one latent print on the right edge of the box. He described it as being a latent print as he did not see it before applying the black powder. He circled the print with a blue marker and applied a scale. Then, Ms. McGreevy photographed the print (see exhibit 1 at numbers 67, 68 and 69). Finally, he used a lifter to remove the print.

[41] In terms of not finding prints anywhere besides on the box that gave rise to the latent print, he noted that simply wiping ones hands can remove the sebaceous materials necessary to make a print. He stated that it is not unusual for adjoining items - in this case, the two boxes next to the one with the latent print - not to have fingerprints.

[42] People's fingers have pores which make fingerprints by sweating or creating oil, forming an impression on the substrate as the ridges stand proud while the valleys between do not. This process leaves a three

dimensional impression which becomes two dimensional in photographs.

[43] He described the ACE-V process, which involves analysis, comparison, evaluation and verification. The analysis starts at the crime scene where he sought a sufficient quantity and quality of fingerprint to analyze. He examined the box for the placement of the print and noted the cardboard doll box was shrink-wrapped. He described the shrink-wrap as a “fantastic” medium; while the ripples on a portion distorted the edge of the print, much of the print was on the smooth plastic and therefore of excellent quality.

[44] In his opinion, the print indicated normal pressure had been applied to the shrink-wrap since the ridges and valleys were the same width apart and there was no distortion. There was also no evidence of movement, save for small visible streaks at the top and bottom. Overall, the clarity was not affected.

[45] At the first level of detail, he said there was good ridge detail and a delta where three ridges met at the centre of the print. At the second level of detail, there were clear bifurcations, ridge endings, islands and lakes which showed good quality and good quantity of features. At the third level of detail, white dots showed the spores on the ridges which added to his confidence in his analysis.

[46] With reference to the term “counting points”, he said that he found 20 features or characteristics on the latent print. He agreed minor variations in appearance could appear.

[47] In sum, visual quality was very good or high quality. Corporal Wolbeck acknowledged that he cannot establish the age of a finger print but on a piece of plastic, fingerprints are known to last a good time.

[48] Cpl. Wolbeck referred to the Scientific Working Group on Friction ridge Analysis, Study and Technology (“SWGFAST”) which has recommended best practises and provided a quality chart. Given his analysis and referring to the quality chart, Cpl. Wolbeck was of the opinion that the fingerprint was of high quality based on the number of characteristics found at level two and the high score the print received on the sufficiency graph. The SWGFAST graphs became exhibit six.

[49] Despite finding discrepancies on the top of the print, where there was some distortion, and on the side of the print, where there was some rippling of the plastic wrap, Cpl. Wolbeck formed an opinion on the individuality of the latent print. He was able to do this because the central area of the print had a low level of tolerance and the ridge characteristics were clear. He stated that it, like all latent prints, was a partial print, but that half an impression is very common in their work and suitable for comparison.

[50] In May 2011, Cpl. Wolbeck was advised of a response from AFIS. He had no personal knowledge of AFIS and how they operated. He received the AFIS file which identified Mr. Bornyk as a possible suspect and conducted a comparison.

[51] He explained that individualisation requires a full comparison and evaluation. He did not rely on the AFIS database as it is a search tool that had, on previous occasions, led to inaccurate results. In other cases he had concluded the comparison to be inconclusive. On occasion, he found clerical errors in terms of physical description and file numbering. On another occasion, he excluded a known source and a potential

suspect.

[52] He enhanced the digital pictures, which was easy, due to the pixel quality of 2600 pixels per inch. He then rotated the picture to vertical and used filters to improve the contrast between the print and the background. He placed the latent print and the known print side by side and noted a red dot, his starting point on both pictures centred on a triangle delta, and traced out ridge by ridge .

[53] He coloured a blue ridge, a green ridge and a purple ridge. He noted 20 features, some of which are more common than others, but which in combination, e.g. a ridge ending in bifurcation, would be rare. He followed a yellow ridge and an orange ridge. Where there was a gap, he looked to see if the ridge closed into the gap or stayed parallel and did not fill in. He noted a short ridge in relation to the delta and opined that it was a rare feature. There was significant agreement in the continuity of the ridge flows. He found the pores clear and unambiguous. He noted they would not always be consistent as fingerprint powder could fill in pore marks, but would generally assist in the validity of the comparison.

[54] He agreed that he did not note the number of the matches and that he used a quality and quantity methodology instead. He said that the clarity of the prints meant it was not a complex comparison and the number of characteristics in agreement was above the norm.

[55] In his opinion, the evaluation met the appropriate standard of identification based on his training and experience and the latent print on the box matched the known print of Mr. Bornyk's right ring finger.

[56] He was aware of the concern about bias and said that it was reduced by the analysis process. They try to keep the ID process at arm's length from the investigators. They attend the crime scene and take as much physical evidence as they can. The primary materials in this case were the fingerprint, DVDs, pictures of the house, his initial bench notes and Mr. Bornyk's Form. He had not met Mr. Bornyk. No one attempted to pressure him in terms of his analysis.

[57] He said he had re-evaluated the print many times since 2011 and that his opinion remained the same. He then sent the latent print and Form for verification. He was aware Sgt. Adele McNaught verified his finding and agreed with his opinion.

### ***Cross Examination***

[58] Corporal Wolbeck agreed Sgt. McNaught's verification was not blind as she knew his opinion before providing her own. He agreed that the RCMP's policy towards verification changed in 2015. He agreed that blind verifications offer greater safeguards, especially in more complex cases.

[59] He agreed at the time the verification occurred, had he made an error, he could have been removed from the Identity Section after a committee reviewed his work. He said the serious consequences made him work to the highest standards.

[60] He agreed he made the comparison to the known print from July 21, 2010. He did not know why the prints were not provided to him at an earlier date.

[61] With respect to the Form, he agreed there was reference to Mr. Bornyk's "history" and he could see that when receiving the fingerprint record.

[62] He was asked about various aspects of the house search, and agreed no other prints were found.

[63] Asked his opinion about how the doll box had been handled by the perpetrator, he said one possible explanation was that the perpetrator had held the box between his thumb and index finger, but he agreed that the box could have been handled in other ways. He agreed when he initially took the print, all he knew was the angle of the print on the box. He did not know which digit had left the print.

[64] With respect to his analysis, he agreed that the red circle eliminated the areas of fingerprint distortion and within the red circle, the print was strong, with clear ridge characteristics, without pressure distortion or deposition pressure affecting it.

[65] He defined minimal discrepancies as those which occur on every impression but will be relative. He agreed there is no official definition of minimal discrepancy. He stated that the examiner was tasked with seeing if the differences between the prints caused any concern.

[66] He agreed clarity was important in providing an area of low tolerance. He said while the latent print had some differences, the small gaps gave him no concern as the ridge markings were comparable.

[67] He was directed to a gap in the print northeast of the red dot but noted that the known print had an impression in that area which would fill in the gap. Another area to the right was similar, which again he attributed to the pressure on the printing. Any variations in his opinion related to the translation of a 3D print to a 2D photo but did not give him concern. With respect to the areas which appeared to show a gap, comparison showed whether or not there was a gap, or whether the parallel ridges moved closer to each other and filled the gap by following the ridges.

[68] He agreed a two centimetre scale was set next to the latent print and that the print measured 15 by 20 millimetres. Corporal Wolbeck said there is no scientific basis for a minimal size parameter but that threshold values are set out in research.

[69] He agreed the analysis process began at the scene but he did not document any characteristics of the latent print at the scene and only did so upon doing his comparison. He said he only documented characteristics if the case was complex. He did not find this was a complex case.

[70] He agreed he did not note the characteristics of the latent print until he had made his comparison. He said he mentally noted but did not document the locations of the ridge endings, islands or lakes or sequence characteristics on the ridge flows. He agreed it would be better practise to document the latent print characteristics to prevent any argument as to him being biased upon seeing the known print.

[71] As to error rates, he agreed he had not, to his knowledge, made an error in his training or examinations. He agreed an examiner must "acknowledge mistakes" when mistakes have been made. He



said he was not aware if he had made any but agreed the research shows statistically there is a known error rate.

[72] He was aware of the Scottish “Fingerprint Inquiry Report” regarding *Her Majesty’s Advocate v. McKie* [McKie], a case where a fingerprint analysis had proved wrong and the investigator had given evidence which proved to be incorrect. He was also aware of the findings of the National Academy of Sciences that a 2004 Madrid train bombing had been wrongly attributed to a Portland lawyer. Cpl. Wolbeck asserted those cases had no resemblance to Mr. Bornyk’s case.

### ***Re-Examination***

[73] In re-examination, Cpl. Wolbeck noted *McKie* and the Madrid bombing were both based on low quality prints. He agreed a number of examiners continue to hold different conclusions on the latter case.

### **Sgt. McNaught**

[74] Sergeant McNaught joined the RCMP in 2001 and began forensic identification field work in 2008. She completed regional and national forensic identification work and went through the formal Canadian Police College Forensic Identification training section in 2015-2016. She is presently the supervisor for the RCMP Forensic Identification Unit in Manitoba.

[75] Her certificate as a forensic identification specialist is dated April 4, 2012, and requires an update every two years. Notably, as she has designed the current update program, she has been exempted from the update process.

[76] Outside of her supervisory duties, she verifies examiners’ findings.

[77] In terms of numbers, she said she had taken 611 crime prints since 2008, 180 of which she had individualized, all of which had subsequently been verified. She was not aware of anyone coming to a different conclusion.

[78] Her credentials were not contested. She was qualified as an expert in locating, taking, collecting, preserving, analysing and comparing fingerprints from a crime scene and making comparisons to known fingerprints.

[79] She agreed the RCMP’s policy in May 2011, after an examiner found a false identification, would result in removal of the first member from the identification section. While that did bring its pressure, it was accepted as part of the job. She said it was a member’s responsibility to provide the Court with an unbiased opinion. Failure to do so could cause the Force to lose credibility or to be implicated with falsifying documents.

[80] She noted the premise of verification is to disprove identification. She has excluded a prime suspect, and on one occasion, been subpoenaed to give defence evidence, but was not called. As an examiner, she has, on three occasions, given a different opinion and found an assessment to be inconclusive, which

resulted in an independent evaluation. She has never excluded a prior individualization conclusion.

[81] With respect to Mr. Bornyk, she received the base documentation, assessed the latent print, found there was sufficient ridge detail, and then analysed the print, finding there was good quality and sufficient quantity of information for analysis. She had no personal knowledge of Mr. Bornyk or the breaking and entry file.

[82] With respect to the print, she assessed the clarity of the print at level one as very good since she was able to see ridge flows clearly, and at level two, she saw the ridge deviations with a many visible characteristics, finding more than 20 clear ridge characteristics. At level three, she found detail including thinning and thickening of the ridges and some pore details. She was satisfied as to the quality and quantity of the fingerprint to do a comparison with the known print. She described the print as clear enough to be unlikely to lead to discrepancies. With respect to the fact that the print found was a partial print, she said that had no effect on her comparison since most latent prints are partial. What is significant is the amount of detail that is available for comparison.

[83] She found some lateral distortion from the deposition impression causing some smearing near the top, and similar distortion due to bubbling of the plastic on the side.

[84] She laid the latent print and known print side by side. She found a starting point and looked to the known print for the corresponding point, and then made comparisons between the two as she went from ridge to ridge. She had little difficulty finding comparable characteristics as she moved around the prints and concluded that given the quality of the print and the number of characteristics that were similar, the known print and latent print had the same source.

[85] She was very confident in her finding based on her training, the high quality of the print and the quantity of the characteristics. She reported no areas of concern.

[86] In cross-examination, she agreed she did not document the specific characteristics she had noted. Asked if she should have noted those matters before comparing the latent print to the known print, she said she had noted some but not all and that was consistent with the Force's policy at the time.

[87] Asked if she was aware there had been findings of error in other cases, she said she was and that that had been referred to in training.

## **Experts**

[88] I heard from two experts, Dr. Wilkinson and Dr. Cole. To a certain degree, their viewpoints were similar. In 2009 the National Research Council of the US National Academies of Sciences ("NRC") published a report entitled "Strengthening Forensic Science in the United States: A Path Forward". The report criticized the alleged expertise of fingerprint examiners as lacking the necessary scientific research underpinnings. The paper said that the examination steps taken by fingerprint experts using the ACE-V criteria were highly subjective and suggested specific measurement criteria could help when the quality of fingerprint marks was reduced.

[89] The report also noted the features used by experts varied in quality, depending on whether fingerprints were partial, smudged, moved, distorted or difficult to interpret when visualised on an interfering background.

[90] While acknowledging the individuality of fingerprints, they noted a lack of population statistics and therefore a potential for statistical modelling in additional research. They raised concerns of contextual bias affecting the consistency of expert opinions. They criticized the three options given to an expert, namely identification, exclusion or inconclusive as being too inclusionary. They were concerned that claims of zero error rates were not scientifically plausible.

### **Dr. Della Wilkinson**

[91] The Crown called Dr. Wilkinson, a research scientist with the Integrated Forensic Identification Services of the RCMP who has held a position with the Forensic Identification Research and Review Services since 1993. She provided the Court with oral and written evidence. She is an internationally recognised expert with 24 years of experience. Since 2008, she has been an active member of the program review of the RCMP Forensic Identification Services, and since 2011, has not only been with the Canadian Friction Ridge working group, but with SWGFAST, a body which has since been dissolved. In 2015, she was selected to be a member of the US led Organization of Scientific Area Committees (“OSAC”). As she put it, she has heard and met the best in fingerprint research in the world.

[92] Dr. Wilkinson took the Court through Dr. Christophe Champod’s papers.

[93] An article by Dr. Champod in 2015 in the Royal Society papers entitled “Fingerprint identification: advances since the 2009 Research Council report” noted a positive response to the criticisms described above. His paper noted the International Association for Identification was supportive of the general thesis that careful comparison to impressions could accurately discern if they had a common source, but further acknowledged the points made by the NRC and suggested more caution in asserting 100% infallibility.

[94] Dr. Champod noted the 2011 *McKie* report stated fingerprint evidence should be recognised as opinion evidence; examiners should not claim 100% certainty; the characteristic features should be demonstrable to a lay person; and note taking as to detail on the analysis and process of comparison should be a general practice.

[95] Dr. Champod commented on scientific developments since the 2009 NRC report. As to bias, commentators pointed to factors that came into play, including whether the mark was suitable for comparison; the presence of the potential source comparison print affecting the number of characteristics annotated; the concern about contextual bias at the examining stage, although interestingly, the previous decision was shown to impact more on false negatives rather than false positives; and as well, other studies showed no clear evidence on how contextual bias had systematic adverse effects.

[96] Two black box studies in 2011 and 2012 demonstrated very high rates of consistency in the accuracy of examiners’ findings of including or excluding latent prints. A review of a second black box study found that

a number of clerical errors lowered the success rate. When those were set aside, the results showed very high accuracy, reliability and reproducibility of fingerprint experts' testing.

[97] Thought was also given to the quality and standardization of latent fingerprints as to defining clarity and potential characteristic features. The greater the clarity of a print and more characteristic features found, the greater the chance of a correct opinion being formed.

[98] Interestingly, Dr. Champod noted that improving transparency means that the focus of testimony in court should be on the comparison alone. In another place, he wrote "the information content of the mark... should be the main focus of the critical discussion".

### **Dr. Simon Cole**

[99] Dr. Cole is a professor with the Department of Criminology, Law and Society, in the School of Social Ecology at the University of California, Irvine, and is an expert in critical analysis of fingerprint comparison protocols. Dr. Cole wrote the book "Suspect Identities: A History of Fingerprinting and Criminal Identification", and has been a leading writer in criticizing fingerprint evidence as a science.

[100] Dr. Cole provided his opinion on the limits of the capacity of Cpl. Wolbeck's claim on individualization of the fingerprint.

[101] With respect to Cpl. Wolbeck's report of May 25, 2011, he expressed his concern that the opinion suggested Mr. Bornyk was the source of the latent print without providing information about the possibility of error or uncertainty. Corporal Wolbeck noted, however, the probability of some other person being the source of the latent print would increase if the quantity of the information and the clarity of the information from the fingerprint decreased.

[102] Secondly, Dr. Cole opined on the nature of fingerprint comparison and whether there is a difference between dissimilarity and discrepancy. He noted, as did Cpl. Wolbeck, that two impressions from the same source area of a person's fingers can have dissimilarities simply due to pressure applied or other factors that can create slightly different prints. He noted that the literature notes that an unexplainable dissimilarity may be trumped by a great number of similarities.

[103] Dr. Cole was asked to define error in a fingerprint comparison. He stated an examiner can create either a false negative or a false positive. He reiterated that Cpl. Wolbeck had testified that no errors were permitted in fingerprint identification and that, throughout his career, he had never made an error. Dr. Cole said such statements confused a lack of awareness of having made an error with the actual state of having made an error. However, I noted Cpl. Wolbeck was aware of this and indeed his testimony regarding infallible certainty had changed over the course of the trial process to reflecting the RCMP awareness of some of the academic concern.

[104] Dr. Cole opined the ACE-V process begins with whether or not the print has value for comparison and allows for three decisions: identification; inconclusive; or exclusion, any of which may be false.

[105] Asked his opinion on potential bias, Dr. Cole noted contextual information extraneous to the information in the print could bias an analyst's judgment. Examples of contextual information that may be a factor include: awareness of other evidence against the suspect; the examiner's sense of importance; team modality or desire to be helpful being a uniformed member of a force; knowledge of an analyst's judgment; whether or not verification is based only on identification decisions; knowledge of the identity of the original examiner; and the fact that a database search produced the candidate known print.

[106] Dr. Cole acknowledged the importance of SWGFAST, now superseded by OSAC and said it was reasonable to equate the SWGFAST guidelines to US best practice guidelines. He noted that SWGFAST had issued a detailed response and while supportive of the general degree of certainty to be found in fingerprint expertise, acknowledged that errors do occur and that claims for zero error rates in the discipline are not scientifically plausible.

[107] What were previously described as decisions are now described as opinions. Dr. Champod in his writing noted that Dr. Cole was making a valid point that fingerprint practitioners had not grasped this subtle nuance as they changed definitions.

[108] Dr. Cole also noted the various reports that I have touched on.

[109] I do not propose to go through all of the evidence and reports put before me. Neither expert commented directly on the fingerprints in issue before me. Rather they indicated that best practises now include:

1. That an examiner initially document the features or characteristics of the fingerprint found at a crime scene and then detail the features or characteristics of a potential known source so the examiner's reasoning is transparent and sufficient to permit another examiner to assess the accuracy and validity of the initial examiner's assessment.
2. Procedures should be implemented to protect examiners from exposure to irrelevant information, e.g. a known source criminal record or the first examiner's findings as to characteristics, features or details.
3. Examiners should not reach a conclusion phrased as "excluding all other individuals in the world".

## **Argument**

### **Defence**

[110] Defence counsel argued that in this case involving circumstantial evidence where the Crown relied solely on the evidence of Cpl. Wolbeck and Sgt. McNaught, it failed to prove the accused was guilty of having committed the offence beyond a reasonable doubt.

[111] First, it submitted there were flaws in the process in that for reasons unexplained, Mr. Bornyk's fingerprints were taken in July 2010 but not provided promptly to Cpl. Wolbeck until 2011.

[112] Second, it noted Cpl. Wolbeck failed to document the latent print's features in writing before comparing it to the known print. Rather, Cpl. Wolbeck said that he noted the characteristics "in his mind". By doing so,

Cpl. Wolbeck may have been influenced by looking at the known print or “confirmation bias”.

[113] Sergeant McNaught’s processing of the fingerprint comparisons was similarly flawed. Her failure to document the latent print’s features, the defence argued, affected her ability to cross-examine the examiner on the initial assessment. It also put her at risk of circular reasoning by knowing the characteristics of the known print.

[114] As to the evidence of the experts that it was not a complex print, the defence argued there was no basis on which to make such a distinction.

[115] Third, the defence submitted that analysis of the print fell prey to contextual bias, given the known print came from the AFIS system. It was suggested that a better practice, rather than being given one set of prints to make a comparison, would be to include several people’s fingerprints for the examiner to consider in correlating the latent print to known prints.

[116] Mr. Bornyk’s criminal history was also listed on the known print supplied. Dr. Wilkinson stated that this could have created contextual bias. While it was acknowledged that the police are trained regarding bias, the reality is that bias can be subtle or subconscious.

[117] Next, the defence argued there was institutional bias in that Sgt. McNaught was aware of the potentially severe consequences for Cpl. Wolbeck should she find that the latent print was not Mr. Bornyk’s. The defence submitted her knowledge that he might lose his job may have prompted her to confirm Cpl. Wolbeck’s finding if it was a close call. It was submitted both opinions were subject to this frailty.

[118] Defence counsel also submitted that a single partial latent print was not a basis for conclusive comparison, since it is possible that two persons might share a partial print. Whole prints, by contrast, are less likely to give rise to similarities. The defence noted that the same person creating two consecutive prints could make slightly different impressions on each occasion and there was a greater possibility of two people possibly sharing a partial print. The recent Neuman “black box” study did not take into account examiner performance, which showed a statistically greater chance of reliability as more characteristics were found by the examiner. It was submitted no further effort was made to exclude other possible prints which gave rise to the confirmation bias argument. Nor were other persons, such as the owners or the agents fingerprinted to exclude them.

[119] Counsel submitted that there were no objective criteria regarding clarity of the print and that where prints were less clear, there were potentially greater chances of drawing a wrong conclusion from comparisons. Defence counsel argued that the potential error rates in the black box studies, ranging from 1 in 18 to 1 in 600, were not scientifically justified. They submitted that allowance must be made for potential error.

[120] Counsel pointed to the fact that the examiners’ opinions were subjective and that context can change the potential outcome. Counsel also stated that there was no scientific validation for claiming infallibility as compared to the scientific basis for DNA. It was submitted that the police officers claims were exaggerated,

without standards and without empirical validation, as compared to DNA.

[121] As well, there were valid criticisms of the reports given the better practices now being put forward.

[122] Counsel criticized the fingerprint search of the ransacked house only located one partial latent print. It was submitted that it defied logic that no other print was found. The finding of one print on one side of the box was also questioned given that there should have been a print on the opposite side of the box.

[123] In summary, defence counsel submitted there was a lack of sufficient evidence to establish proof beyond a reasonable doubt that Mr. Bornyk was the person responsible for the burglary of the Porritts' house.

### **Crown**

[124] The Crown summarized the evidence regarding the break in of the Porritts' house, the Porritts' evidence as to the doll box and other doll box collectibles and the police evidence as to the finding and taking of the latent fingerprint.

[125] The investigation was becalmed until May 4, 2011, when Ms. McGreevy was advised by AFIS of a possible source for Mr. Bornyk's print.

[126] Corporal Wolbeck's analysis of the friction ridge impression followed a comparison to Mr. Bornyk's known Form prints. After conducting a quantitative and qualitative evaluation of the friction ridge formations, he arrived at the opinion that the latent print from the Porritts' address and the known print on the Form originated from the same person: Mr. Bornyk. In subsequent verification, Sgt. McNaught came to the same conclusion.

[127] Both officers were confident in their identifications and had no issues identifying the origin of the source print as being the same as the latent print found at the Porritts' residence. Crown also noted the expertise of both Cpl. Wolbeck and Sgt. McNaught. Corporal Wolbeck and Sgt. McNaught's opinions, the Crown submitted, were reliable, given their substantial experience.

[128] With respect to the reliability of the findings, counsel referred to the Neuman likelihood ratio study showing the quantity and clarity of the characteristics or features of a fingerprint, which substantially increased the probability of a latent and known print being the same to between one billion and 1.2 billion when the latent print had 12 characteristics. It was noted both examiners had found at least 20 common characteristics between the latent and known prints.

[129] Both officers testified they were not biased. They noted the need for honesty and integrity in their work. The Crown also noted that some bias concerns were not present in this case as it was not high profile, neither examiner had any prior knowledge or dealing with Mr. Bornyk, and Sgt. McNaught had no part in the investigation.

[130] Crown noted the defence did not lead any evidence contradicting the examiners' findings, but rather

cross-examined the fingerprint examiners about their methodology. Reference was made to Dr. Wilkinson citing Dr. Champod, who said “when the mark is rich in information, the risk that bias will significantly impact judgment is limited”. Dr. Cole had agreed such a statement was reasonable.

[131] Crown conceded fingerprint examiners have made false identifications and that erroneous identifications occurred in the two leading error rate studies (the FBI black box study and the Miami Dade study) and in the *McKie* and Madrid reports. Crown counsel pointed out that the prints in the *McKie* and Madrid cases were of lower quality than the high quality latent print found at the Porritts’ house. The fingerprint at the Porritts’ house was clear, contained a large number of characteristics and equated to the low error rates in the studies (1 in 605; 1 in 522).

[132] As to the law, counsel cited *R. v. Villaroman*, 2016 SCC 33, and *R. v. Robinson*, 2017 BCCA 6, which confirmed that in a circumstantial case, evidence must be consistent with guilt and inconsistent with any other rational conclusion for a conviction to ensue and for something to be proved beyond a reasonable doubt. The trier of fact should not jump to conclusions or fill in blanks in a circumstantial case; a jury should be instructed that an inference of guilt from circumstantial evidence should be the only reasonable inference for such evidence and a reasonable doubt must be reasonable given the evidence and absence of evidence assessed logically and in light of human experience and common sense but the Crown need not negative speculation. Emphasis must be placed on determining whether or not the evidence as a whole establishes the accused’s guilt.

[133] As noted in *R. v. Hoppe*, 2017 BCCA 25, a single fingerprint can support a conviction. There, Frankel J.A. noted:

[12] ... in the absence of a credible explanation for how Mr. Hoppe’s fingerprint came to be on the underside of the cash register, it was open for the trial judge to find it was placed there when Mr. Hoppe moved the cash register away from the front counter of the restaurant.

See also *R. v. O’Neil* (1996), 71 B.C.A.C. 295 (C.A.), *R. v. Gauthier*, 2009 BCCA 24, *R. v. MacFadden* (1981), 60 C.C.C. (2d) 305 (B.C.C.A.).

[134] The Crown submitted no other reasonable inference could be found other than that Mr. Bornyk’s fingerprint was left on the doll box when he moved the box during the break and entry of the Porritts’ home. The evidence was that Mr. Porritt had ordered Living Dead dolls from a US company, had them shipped, stored them on the top shelf in his toy room, was not aware of anyone other than himself and his daughter handling the toys and used a high level of security throughout the time the house was for sale to guard the house. The Porritt residence was broken into July 6 and 7, 2010 during which time the house was ransacked and items moved and strewn all over the house, including the doll boxes, which were moved from the shelving to a box on the floor.

[135] The item on which the fingerprint was found was in the house at all times. There was no contrary evidence and so the only reasonable conclusion was that Mr. Bornyk’s fingerprint was left on the doll box during the break and enter and theft from the Porritts’ house.



## **Conclusion**

[136] Central to the defence case is a latent fingerprint found on July 7, 2010. Two experts have examined it and compared it to a known print from Mr. Bornyk. Both have testified the latent print was clear and that it matched a portion of fingerprint taken from Mr. Bornyk's right index finger.

[137] No attack has been made on the fingerprints themselves. Nor has the defence questioned the accuracy of the examiners' assessment who say that the print is of high quality and that there are 20 or more common characteristics between the latent print and Mr. Bornyk's source print. Nor have I been pointed to any discrepancy in the fingerprints that would lead me to believe that either of the two highly qualified examiners made an error in judgment.

[138] Much of the evidence in front of me was compelling in the sense that fingerprints, until the advent of DNA, enjoyed a very high level of acceptance in correctly identifying a person who left a print at a crime scene.

[139] There is no question that fingerprint examiners are giving opinion evidence based on their experience and training in comparing fingerprints from a crime scene to a known source fingerprint.

[140] What is fundamental is that fingerprints are highly individualized. While it may be statistically possible that one set of fingerprints is similar to fingerprints from another person in the world, no evidence was laid in front of me that there is a person with identical fingerprints to another, not even identical twins.

[141] Research from the last 10 years has given examiners standard operating principles and procedures for their assessments to improve the acceptability of their opinion evidence in court.

[142] While both examiners here quite properly acknowledged they had not noted the characteristics of the latent print before moving onto the comparison with the known print, both were unequivocal that the partial print was of sufficient clarity and contained a large number of similar individual characteristics or features to conclude that the latent print had originated from the same source as Mr. Bornyk's known print.

[143] While the defence argued it was odd that only one print was found in such a badly ransacked house, the only rational explanation as to why Mr. Bornyk's right index fingerprint would show on the plastic wrapper of the Living Dead doll was because he held the box during the break in on the night of 6-7 July, 2010.

[144] In sum, in the circumstantial case I have before me, clear evidence from experts identifies the latent print as Mr. Bornyk's. The only rational explanation is that the person who broke and entered the Porritts' house on the night of July 6-7, 2010, was Mr. Bornyk. I am satisfied of his guilt beyond a reasonable doubt.

"Crawford J."