Case Name:

R. v. Paszczenko; R. v. Lima

Between
Her Majesty the Queen, Appellant, and
Mieczyslaw Paszczenko, Respondent
And between
Her Majesty the Queen, Respondent, and
Albano Lima, Appellant

[2010] O.J. No. 3974

2010 ONCA 615

272 O.A.C. 27

100 M.V.R. (5th) 1

103 O.R. (3d) 424

2010 CarswellOnt 6968

81 C.R. (6th) 97

Dockets: C49970, C51090

Ontario Court of Appeal
Toronto, Ontario

R.J. Sharpe, R.A. Blair and J.L. MacFarland JJ.A.

Heard: April 30, 2010.
Judgment: September 23, 2010.

(67 paras.)

Criminal law -- Criminal Code offences -- Offences against person and reputation -- Motor vehicles -- Impaired driving or driving over the legal limit -- Breathalyzer or blood sample demand -- Evidence to the contrary -- Appeal by Crown from acquittal of accused allowed -- Appeal by

another accused from dismissal of conviction appeal dismissed -- Both accused charged with driving with blood alcohol level exceeding legal limit -- Both gave breathalyzer samples over two hours after arrest while exhibiting indicia of impairment -- Expert reports containing assumptions about elimination rate and plateaus properly considered -- Assumptions, widely accepted by legal community, based on science -- No specifics required about amount of alcohol giving rise to bolus drinking defence -- Defence not available where accused exhibited signs of intoxication at time of arrest -- Criminal Code, ss. 258(1)(c), 657.3.

Criminal law -- Evidence -- Methods of proof -- Presumptions -- Of fact -- Scientific evidence -- Opinion evidence -- Expert evidence -- Basis for opinion -- Appeal by Crown from acquittal of accused allowed -- Appeal by another accused from dismissal of conviction appeal dismissed -- Both accused charged with driving with blood alcohol level exceeding legal limit -- Both gave breathalyzer samples over two hours after arrest while exhibiting indicia of impairment -- Expert reports containing assumptions about elimination rate and plateaus properly considered -- Assumptions, widely accepted by legal community, based on science -- No specifics required about amount of alcohol giving rise to bolus drinking defence -- Defence not available where accused exhibited signs of intoxication at time of arrest.

Appeal by the Crown from a decision allowing Paszczenko's appeal from conviction. Appeal by Lima from the dismissal of his conviction appeal. Both Paszczenko and Lima were convicted of driving with a blood alcohol level exceeding the legal limit. Paszczenko was arrested after a single vehicle accident at the scene of which he exhibited indicia of impairment. He later gave two breath samples both showing he had a blood alcohol level of 120. Samples for breathalyzer testing were not taken within two hours of Paszczenko's alleged offence. The Crown tendered expert evidence from a toxicologist projecting Paszczenko's blood alcohol level at between 130 and 180 at the relevant time. The expert's projections were based on assumptions that no bolus drinking had occurred prior to the accident, that no alcohol was consumed after the collision, using an assumed rate of elimination of alcohol from the blood, and a plateau at the lower blood alcohol level estimation. The appeal court, in allowing Paszczenko's conviction appeal, concluded there was no evidentiary basis for the trial judge's reliance on the assumption concerning the plateau. In a separate incident, Lima was stopped while driving his car in an unusual fashion. He exhibited indicia of impairment. Breathalyzer tests were administered outside the two-hour window because Lima required Portuguese-speaking duty counsel. Lima registered readings of 110 and 100. The Crown again provided expert evidence Lima would have had a blood alcohol level of between 110 and 160 at the relevant time, the expert relying on the same assumptions. The trial judge found by inference from the arresting officer's evidence that there was no alcohol in Lima's car and that Lima had no access to alcohol after his arrest. He noted there was no evidence that Lima just left a drinking establishment when he was stopped. He rejected the defence argument that the signs of intoxication observed were evidence of bolus drinking. The judge in Lima's case accepted that the expert could rely on the assumptions about elimination rate and the plateau in the absence of a challenge by Lima. The appeal court was satisfied that the assumptions were matters within the

toxicologist's expertise upon which the judge was entitled to rely. The court also noted that it was entitled to take judicial notice of this fact, accepted by another court in a previous decision.

HELD: Appeal by Crown allowed; appeal by Lima dismissed. Paszczenko's conviction was restored. The judge properly rejected the bolus drinking defence in Lima's case. Given the indicia of impairment that Lima exhibited at the scene of his arrest, it was unreasonable to suggest that his blood alcohol level was at that time below the legal limit but on the way up due to bolus drinking. There was ample support in authoritative forensic science and law for the conclusion that the assumptions about elimination rate and the plateau were assertions of scientific knowledge, which did not need to be specifically proven. Specifics of the assumptions, such as the exact quantity of alcohol consumed that could give rise to the bolus drinking defence, were not necessary.

Statutes, Regulations and Rules Cited:

Canadian Charter of Rights and Freedoms, 1982, R.S.C. 1985, App. II, No. 44, Schedule B, s. 10(b)

Criminal Code, R.S.C. 1985, c. C-46, s. 258(1)(c), s. 657.3

Appeal From:

On appeal, in Paszczenko, from the order of Justice F. Kiteley of the Superior Court of Justice dated January 5, 2009, allowing a summary conviction appeal from a conviction entered by Justice D.P. Cole of the Ontario Court of Justice on September 27, 2007.

On appeal, in Lima, from the order of Justice R. Clark of the Superior Court of Justice dated September 16, 2009, dismissing a summary conviction appeal from a conviction imposed by Justice A. Tuck-Jackson of the Ontario Court of Justice on January 10, 2008.

Counsel:

James V. Palangio, for the Appellant Crown in the Paszczenko appeal.

David North, for the Respondent Paszczenko.

Richard G. Zoppi, for the Appellant Lima.

Greg Skerkowski, for the Respondent Crown in the Lima appeal.

The judgment of the Court was delivered by

R.A. BLAIR J.A.:--

Introduction

1 The appeals of Mr. Paszczenko and Mr. Lima were heard on the same day. The central issue in each concerns the manner in which the Crown must prove the facts underlying the four assumptions upon which expert toxicology reports filed in "over 80" cases where the breath test has not been administered within two hours of the driving incident are routinely based.

2 In the jargon of these cases, the four assumptions are commonly referred to as (i) no "bolus drinking", i.e., no rapid consumption of large amounts of alcohol shortly prior to the incident; (ii) no consumption of alcohol between the incident and the breath test; (iii) an "elimination rate" of 10 to 20 milligrams of alcohol in 100 millilitres of blood per hour; and (iv) a two-hour "plateau" after drinking where the rate of elimination does not change.

3 Both Mr. Paszczenko and Mr. Lima were convicted in the Ontario Court of Justice of operating a motor vehicle while the concentration of alcohol in their blood exceeded 80 milligrams of alcohol in 100 millilitres of blood - Mr. Paszczenko by Justice D.P. Cole, and Mr. Lima by Justice A. Tuck-Jackson. On appeal to the Superior Court of Justice, Mr. Paszczenko's conviction was overturned by Justice F. Kiteley; Mr. Lima's conviction was affirmed by Justice R. Clark.

4 For the reasons that follow, I would allow the Crown's appeal in the Paszczenko case and dismiss Mr. Lima's appeal.

The Facts in Paszczenko

5 On February 23, 2005, Mr. Paszczenko was involved in a rear-end collision with another vehicle in the Islington Ave./Queensway area of Toronto and was arrested after the attending police officer observed the usual symptoms of drinking - a strong smell of alcohol; unsteadiness on the feet; bloodshot and glassy eyes; and slurred speech.

6 After speaking with duty counsel, Mr. Paszczenko provided two samples of breath, registering 125 milligrams and 122 milligrams of alcohol in 100 millilitres of blood. In the fashion of these cases, the readings were "truncated" - read down - to 120 and 120, for purposes of the report.

7 For reasons that are not pertinent to the appeal, the samples (which are otherwise unchallenged) were not taken within two hours of when the offence was alleged to have occurred.[1] Because of this, the Crown was not entitled to rely upon the presumption set out in s. 258(1)(c) of the Criminal Code that the results of the breath tests were proof of the concentration of alcohol in Mr. Paszczenko's blood at the time of the occurrence. As a result, the Crown tendered an expert's toxicology report that projected his blood alcohol content ("BAC") to have been between "130" and "180" at the

relevant time. The report was filed in the form of an affidavit, pursuant to s. 657.3 of the Code. The report's author, James Wigmore, did not testify, nor did the defence seek to cross-examine him (as it was entitled to do) or to exclude his report.

8 Mr. Wigmore's report framed the "several additional factors on which his estimate was based" - the four assumptions generalized above - in this way:

1. No large quantities of alcohol were consumed immediately prior to the collision (this is commonly referred to as "no bolus drinking");
2. No alcohol consumption took place after the collision prior to the Intoxilyzer tests;
3. A rate of elimination of alcohol from the blood, which may range between 10 and 20 milligrams of alcohol per 100 millilitres of blood per hour; and
4. A plateau at the lower BAC estimation.

9 At trial, the defence argued that the Court could not rely upon the expert's report because assumptions (3) and (4) - the "rate of elimination" and the "plateau" - had not been proven. Justice Cole refused to give effect to this argument, holding that to do so would cause much of the scheme for the admission of expert evidence in such cases "to fall by the wayside" and that this "[could] not be the intention of Parliament." In the absence of other evidence, he applied the best evidence rule to the report and accepted the calculations set out in it.

10 The summary conviction appeal judge ("SCAJ"), Justice Kiteley, disagreed. The principal issue argued before her was the requirement for proof of the fourth assumption concerning the "plateau." She concluded that there was no evidentiary basis upon which the trial judge could accept and rely upon that assumption. She therefore set aside the conviction. In doing so, she carefully and thoroughly canvassed the various conflicting authorities that have been decided both in the Ontario Court of Justice and the Superior Court of Justice.

The Facts in Lima

11 On July 2, 2006, Mr. Lima was arrested by a police officer on St. Clair Ave. W. in Toronto after failing a breath test administered through an approved screening device. Mr. Lima also exhibited common indicia of drinking and driving; there was an odour of alcohol on his breath, his eyes were glassy and his speech slightly slurred. He was taken to a police station where he provided two samples of his breath into an approved instrument, registering readings of 118 and 103 milligrams of alcohol in 100 millilitres of blood (truncated to 110 and 100).

12 Because of the need to contact and permit Mr. Lima to speak to a Portuguese language duty counsel, the tests were administered more than two hours after the occurrence in his case as well, and the Crown could not rely on the s. 258(1)(c) presumption. Again, the Crown filed an expert's toxicology report, in accordance with s. 657.3. It projected Mr. Lima's BAC to have been between "110" and "160" at the relevant time. The report's author, Patricia Solbeck, did not testify. At trial,

defence counsel did not contest the admissibility of the report, did not call evidence and did not seek to cross-examine the expert (as he, too, was entitled to do).

13 In her report, Ms. Solbeck framed her "additional factors" - the four assumptions - in this way:

1. No rapid consumption of large quantities of alcoholic beverages shortly prior to the incident (commonly referred to as "no bolus drinking");
2. No consumption of alcoholic beverages after the incident and before the Intoxilyzer 5000C test;
3. A rate of elimination of alcohol from the blood ranging from 10 to 20 milligrams of alcohol in 100 millilitres of blood per hour; and
4. Allowance for a plateau of up to two hours when using the lower rate of alcohol elimination.

14 At trial, Justice Tuck-Jackson concluded that assumptions (1) and (2) required case-specific proof by the Crown and that, with respect to bolus drinking, this could be proved either through the absence of evidence of bolus drinking or through the absence of evidence that would undermine the common sense inference of drinking at a normal pace. She concluded that the Crown had discharged its onus of proof on assumptions (1) and (2).

15 With respect to assumptions (3) and (4), she was satisfied that the elimination rate and the plateau were information that was widely used and acknowledged within the report author's area of expertise and could therefore form the basis of the expert's opinion without any need to lead evidence to support it. Even though Ms. Solbeck had not stated in her report that the two assumptions were widely used and acknowledged as reliable in her field, the trial judge accepted that she could rely on this evidence in the absence of any challenge by the accused. She therefore convicted.

16 The SCAJ, Justice Clark, upheld the conviction. Like the trial judge, he characterized the first two assumptions as fact and case-specific and the latter two as involving scientific propositions of general application. It was conceded that there had been no post-arrest drinking, and the SCAJ concluded that there was "a sufficient body of circumstantial evidence" upon which the trial judge could have drawn the inference of no bolus drinking. He was satisfied that assumptions (3) and (4) were matters within the toxicologist's expertise and that, in the absence of some evidence to the contrary, the trial judge was entitled to rely on them without discounting them: see R. v. S.A.B., [2003] 2 S.C.R. 678, at para. 62. In addition - relying upon the decision of this Court in R. v. Koh (1998), 42 O.R. (3d) 668 - he concluded that the Court could take judicial notice of facts previously found by other courts. In R. v. Phillips (1988), 42 C.C.C. (3d) 150, this Court accepted the same four assumptions that are at issue on this appeal.

Leave to Appeal

17 I am satisfied that leave to appeal should be granted in both cases.

18 Each appeal raises essentially the same problem: what is the Crown required to prove in order to be able to rely upon the standard assumptions contained in expert toxicologist reports submitted under s. 657.3 of the Criminal Code in relation to a driver's BAC at the time of arrest when the Crown is precluded from relying upon the presumption contained in s. 258(1)(c)? This is a question of law and raises an issue of general application and importance to the administration of justice, particularly in view of the conflicting jurisprudence presently existing in the lower courts on this subject. See R. v. R.(R.) (2008), 90 O.R. (3d) 641 (C.A.).

19 I would therefore grant leave to appeal.

Analysis

20 The two appeals focused on the proof of different assumptions. In Lima, the principal attack was on the proof required to establish the "no bolus drinking" assumption, although proof of the "plateau" and the "elimination rate" assumptions was also in play. The Paszczenko appeal centred on proof of the two latter assumptions, with particular attention paid to the plateau hypothesis. I shall deal with these issues separately, but first I turn to a review of some general considerations relating to proof in this context.

General Considerations of Proof

21 There can be no dispute that the onus is on the Crown to prove the facts underlying the expert's report, including the assumptions upon which the expert relies. As Sopinka J. noted in R. v. Lavallee, [1990] 1 S.C.R. 852, at p. 898: "before any weight can be given to an expert's opinion, the facts upon which the opinion is based must be found to exist." See also, R. v. Grosse (1996), 29 O.R. (3d) 785 at p. 790 (C.A.), leave to appeal refused, [1996] S.C.C.A. No. 465. As noted above, however, the issue here is not whether the Crown must prove the assumptions, but how it is required to do so.

22 In this respect - as the SCAJ in Paszczenko noted - the Ontario jurisprudence in the courts below falls into two categories. The first group of authorities requires that all four of the standard assumptions on which the toxicologist opinion is based be proved by case-specific evidence: see, for example, R. v. Castro-Mendoza, [2004] O.J. No. 6265, (November 25, 2004), Toronto (Ont. C.J.); R. v. Hansraj, [2003] O.J. No. 3746 (C.J.); R. v. Lin, 2007 ONCJ 312; R. v. Virk, [1999] O.J. No. 5524 (C.J.); R. v. Nauss, [2003] O.J. No. 5943 (C.J.); and R. v. Thompson, [2007] O.J. No. 1204 (C.J.). The second group of authorities holds that the assumptions about elimination rates and the plateau differ from the assumptions regarding drinking before and after the incident in terms of the proof required, and that the elimination rate and plateau assumptions are matters of scientific knowledge on which the expert is entitled to rely without further proof by the Crown: see, R. v. Kim, 2007 ONCJ 488; R. v. Lima, [2009] O.J. No. 3805, 2009 CanLII 49638 (Ont. S.C.); R. v. Calabretta, 2008 ONCJ 27, aff'd [2008] O.J. No. 4188 (S.C.); R. v. Rajeswaran, [2003] O.J. No. 2210 (C.J.); and R. v. Pucknell, [2000] O.J. No. 3512 (S.C.).

23 In my view, the latter line of jurisprudence represents the proper approach. It is consistent with that taken by the Supreme Court of Canada in Lavallee and in S.A.B., where the distinction is made between "evidence that an expert obtains and acts upon within the scope of his or her expertise" and "evidence that an expert obtains from a party to the litigation": S.A.B., at paras. 62-63. In the toxicology report context, this distinction has been described as the difference between "foundation facts" that must be proven in evidence (bolus drinking and post-incident drinking have been held to fall into this category), and information acted upon by an expert obtained as a result of his or her expertise (the elimination rate and plateau assumptions have been held to fall into this category). I agree with this distinction and accept as accurate the following statement by C. Brewer J. in Kim, at para. 12:

> However, it is also well established that an expert is entitled to rely on information that is widely used and acknowledged as reliable within that field and that is employed as an accepted means of making decisions within that area of expertise: see R. v. Zundel (1987), 31 C.C.C. (3d) 97 (Ont. C.A.) at 146; R. v. Lavallee, supra, per Sopinka J., concurring, at 132; R. v. Terceira (1997), 123 C.C.C. (3d) 1 (Ont. C.A.) at 37-39. This information may form a basis for the expert's opinion without any need to lead evidence to support it. [Emphasis added.]

24 In Calabretta, then Associate Chief Justice J.D. Wake came to a similar conclusion, at para. 27:

> Nevertheless, accepting that there must be a basis for all four assumptions it seems that there is a difference between the first two assumptions and the latter two. The first two assumptions, (bolus drinking) (no drinking after offence) are clearly matters of fact for the trial judge to determine on the evidence or lack thereof presented at the trial. The latter two assumptions (rate of elimination) and (allowance for a plateau) are really matters of science upon which an expert should be able to rely.

25 Justice Langdon, the SCAJ in Calabretta, also accepted this analysis, at paras. 9-11.

26 An expert is entitled to refer to sources within his or her field to explain and support the conclusions drawn: S.A.B., at para. 63. I conclude, therefore, that in the absence of a challenge to the expert, assumptions 3 (the elimination rate) and 4 (the plateau) need not be proved by case-specific evidence led at trial to support them, other than the expert's toxicological report filed pursuant to s. 657.3 of the Code. Assumptions 1 (no bolus drinking) and 2 (no post-incident drinking) require case-specific proof.

The "No Bolus Drinking" Assumption

27 "Bolus drinking" is generally meant to describe the consumption of large quantities of alcohol

immediately or shortly before driving: see Grosse, at p. 788; R. v. Hall (2007), 83 O.R. (3d) 641 (C.A.), at para. 14. See also Phillips at pp. 158-162, for a description of the "relatively rare" phenomenon, although not by the "no bolus drinking" name.

28 In establishing that an accused has not engaged in bolus drinking, the Crown is in the unenviable position of having to prove a negative. But how does it meet that onus in circumstances where - as is likely in many cases - it has no statement or evidence from the accused as to his or her drinking pattern at the relevant time and no other witnesses or evidence to shed any light on that issue? That is the dilemma posed, principally, by the Lima appeal.

29 At one level, the answer is straightforward: the Crown need do very little. The toxicologist's report is premised - amongst other things - on there being no bolus drinking. In the absence of something on the record to suggest the contrary, on what basis could a trier of fact conclude there was bolus drinking? This Court has answered the question posed by concluding that triers of fact may resort to a common sense inference in such circumstances, namely, that people do not normally ingest large amounts of alcohol just prior to, or while, driving: see Grosse, Hall, and R. v. Bulman, 2007 ONCA 169. As noted above, bolus drinking has been said to be a "relatively rare" phenomenon: Phillips, at pp. 158-162. "No bolus drinking" is therefore largely a matter of common knowledge and common sense about how people behave.

30 In Grosse, at p. 792, the Court said:

> The trial judge was also entitled to consider that it was inherently unlikely that the respondent, in the space of less than 30 minutes, before embarking on his trip home to Brampton would consume the equivalent of nine ounces of alcohol. This was not a matter of taking judicial notice of drinking patterns but merely applying common sense as to how ordinary people behave. [Emphasis added.]

31 And in Bulman and Hall, respectively, Justices Gillese and LaForme observed:

> Bulman, para. 13:
>
> The jury was aware that [the toxicologist's] expert testimony was dependent on an underlying assumption that had to be proven by the Crown - namely, that the appellant had not consumed a large quantity of alcohol shortly before driving ("bolus drinking"). Whether [the expert's] underlying assumption was proven was a question of fact for the jury to decide. In making this finding, the jurors were entitled to rely upon their common sense, and to draw inferences about how normal people behave. A reasonable inference is that normal people do not consume large quantities of alcohol shortly before, or while, driving.

Hall, para. 20:

> There can be no doubt that the trial judge rejected his evidence on this issue entirely [i.e., the evidence of a defence witness to the effect that the accused had consumed half a glass of beer quickly just before leaving a restaurant]. Having done so, there was no evidence whatsoever of bolus drinking, nor was there any other evidence to undermine the common-sense inference of drinking at a normal pace, on which the trial judge was therefore entitled to rely.

32 I would frame the rationale for this approach as the imposition of a practical evidentiary burden on the accused, not to persuade or convince the trier of fact that there was bolus drinking involved, but to point to something in the evidence (either in the Crown's case, or in evidence led by the defence) that at least puts the possibility that the accused had engaged in bolus drinking in play. The imposition of a practical evidentiary burden to come forward with evidence is simply another way of explaining the invitation to draw a common sense inference which puts the accused in essentially the same spot if he or she cannot point to some evidence to overcome either hurdle.

33 Grosse was also a case involving proof of the bolus drinking assumption underlying a toxicologist's "over 80" opinion. In rejecting a Crown argument resting on the difficulty of proving a negative and urging that there should be an onus on the accused to show the consumption of large quantities of alcohol just prior to the incident - particularly since this information is private to the accused - the Court said at p. 790:

> [Counsel for the Crown] argued that the amount of alcohol consumed is a matter peculiarly within the knowledge of the accused and it is fair that the accused have the burden of proof of this issue. We assume that [he] is suggesting that there be only an evidentiary burden on the accused, not a persuasive burden.
>
> In our view this argument must also be rejected. In effect [the Crown] would have us create a common law presumption, in a case such as this, that in the absence of evidence to the contrary an accused against whom expert evidence of blood-alcohol level is tendered is deemed not to have consumed large quantities of alcohol immediately before providing a breath sample. There is no basis for creating such an extraordinary presumption. Parliament has by statute created a presumption to assist the Crown in proof of the blood-alcohol level at the time of the alleged offence. That presumption, however, is based on proof of a number of facts including proof that the tests were taken within two hours of the alleged offence.
>
> It would not be appropriate for the courts to broaden the scope of the

> statutory presumption when the carefully created conditions in s. 258 cannot be met. Where the Crown cannot rely upon the presumption in s. 258(1)(c) it must prove its case in the ordinary way. [Emphasis added.]

34 The common law presumption advocated by the Crown and rejected by the Court in Grosse, is not the same as the practical evidentiary burden to come forward with some evidence that arises through the application of the common sense inference described above. In Grosse, the Court spoke of the accused having the burden of proof on the issue and of the potential creation of a presumption of law that would deem no bolus drinking to be proven in the absence of evidence to the contrary. This is the language of persuasion. Here, the effect of the evidentiary shift is not to require the accused to convince the trier of fact of anything, but simply to be able to point to some evidence on the basis of which it can be said the issue of bolus drinking is alive on the record.

35 Chief Justice Dickson distinguished between a persuasive burden (which, constitutionally, cannot be shifted to the accused) and an evidentiary burden (which in some circumstances may be) in R. v. Schwartz, [1988] 2 S.C.R. 443. He pointed out that the former requires proof of the existence of a certain set of facts whereas the latter does not require the party with the evidential burden to convince the trier of anything. At p. 466, he said:

> Judges and academics have used a variety of terms to try to capture the distinction between the two types of burdens. ... I prefer to use the terms "persuasive burden" to refer to the requirement of proving a case or disproving defences, and "evidential burden" to mean the requirement of putting an issue into play by reference to evidence before the court. The party who [page 467] has the persuasive burden is required to persuade the trier of fact, to convince the trier of fact that a certain set of facts existed. Failure to persuade means that the party loses. The party with an evidential burden is not required to convince the trier of fact of anything, only to point out evidence which suggests that certain facts existed. The phrase "onus of proof" should be restricted to the persuasive burden, since an issue can be put into play without being proven. [Emphasis added.]

36 See also, Colvin, E. and Anand, S., Principles of Criminal Law, 3rd ed. (Toronto: Thomson Carswell, 2007) at pp. 79-85.

37 For the reasons explained above, applying the common sense inference where there is no evidence of bolus drinking in circumstances where the Crown is required to prove the negative (i.e., no bolus drinking) is simply an example of the Schwartz notion of an evidential burden, in my view. It does not involve attaching an onus of proof to the accused or the creation of a presumption or deeming provision in the sense forbidden in Grosse. On that basis, it would be more straightforward, it seems to me, to refer to this evidentiary exercise as a shift in the practical evidentiary burden on the basis of which - absent something to put bolus drinking in play - an

inference may (but not must) be drawn.

38 As noted above, the Court in Grosse resolved the issue before it by resorting to the common sense inference that normal people do not ingest large amounts of alcohol shortly before getting into their car and driving. This Court has adopted that same technique in Hall and Bulman. That common sense inference was available to the trial judge and the SCAJ in Mr. Lima's case, and particularly so in view of the following factors:

a) Mr. Lima was stopped while driving his vehicle in an unusual fashion;
b) He exhibited signs of driving while intoxicated at the time (smell of alcohol on his breath; red, bloodshot and glassy eyes; flushed face);
c) The trial judge found by inference from the arresting officer's evidence that there was no alcohol in Mr. Lima's car, and that he had no access to alcohol from the time of his arrest to the time of the breathalyzer tests;
d) There was no evidence that Mr. Lima had just come from an establishment serving alcoholic beverages; and
e) The trial judge found that there was no change in the indicia of alcohol consumption during the period between his arrest and the administration of the breathalyzer tests, thus rejecting the defence argument that increased signs of intoxication were evidence of bolus drinking.

39 The fact that Mr. Lima was exhibiting signs of intoxication while driving and immediately after exiting the vehicle, while not conclusive, provides some circumstantial evidence of the absence of bolus drinking, in my view. The effect of bolus drinking is to create a situation where the accused driver's BAC may have been below 80 milligrams of alcohol in 100 millilitres of blood at the time of the incident, yet still register "over 80" in a read-back calculation done later because it was still rising at the time of the incident. If the BAC were less than 80 at the time of the incident, one would not expect to see such indicia of intoxication. This is circumstantial evidence tending to support the view that there was no bolus drinking in the circumstances.

40 Given these facts, together with the application of the common sense inference, the trial judge was entitled to conclude, as she did, that the Crown had proved the facts underlying the toxicologist's "no bolus drinking" assumption. The SCAJ correctly upheld the finding.

41 Bolus drinking was not raised as an issue in Mr. Paszczenko's case.

The "Plateau" and "Elimination Rate" Assumptions

42 It is well-accepted in the case law and in the forensic science literature (a) that the elimination of alcohol from the body generally continues at a relatively constant rate which ranges from approximately 10 to approximately 20 milligrams of alcohol per 100 millilitres of blood per hour, and (b) that, after rising rapidly within approximately 30 minutes of the last drink, a person's BAC will remain at a relatively constant plateau for approximately two hours, before declining at the

foregoing rate. See Phillips and the academic legal and scientific literature relied on therein.[2] See also R. v. Gibson; R. v. MacDonald, [2008] 1 S.C.R. 397, per Charron J. at paras. 8 and 11, and per Deschamps J. (dissenting, but not on this point), at paras. 85, 87-89; and R. M. McLeod, J.D. Takach & M.D. Segal, Breathalyzer Law in Canada, 4th ed. (Toronto: Carswell, 2009), at 29-6, 29-8 and 29-9. Indeed, in Gibson/MacDonald, Deschamps J. would have held that accepting an average rate of elimination of 15 milligrams per 100 millilitres of blood per hour "... would amount only to acknowledging the factual findings of trial judges across the country" (para. 88).

43 There is therefore ample support in authoritative forensic science and legal fields for the conclusion that the elimination rate and the plateau assumptions found in the expert toxicology reports of Mr. Wigmore and Ms. Solbeck were not purely assumptions, but were assertions of scientific knowledge based upon matters within their field of expertise and, accordingly, need not be specifically proven.

44 In Paszczenko, the SCAJ attempted to distinguish the S.A.B. differentiation between "foundation" facts and "scientific" facts from this case on several bases which I find unhelpful.

45 First, she concluded that in S.A.B. and in many of the lower court decisions accepting the distinction, there was no "challenge to the expert" whereas in Paszczenko there was such a challenge because defence counsel attacked various aspects of the toxicology report in his submissions. Unlike the SCAJ, however, I do not accept that the type of "challenge to the expert" as contemplated in S.A.B. consists of an attack on the alleged frailties of the expert's report during argument at the close of the case. Such an attack may be successful in some cases where there are apparent weaknesses in the report, to be sure. But the type of "challenge to the expert" contemplated in the jurisprudence that would counter the expert's assumptions and opinion is in my view an evidentiary challenge made by way of cross-examination of the Crown's expert (giving the expert an opportunity to explain, retract, elaborate or clarify his or her report) or by calling contradictory defence expert evidence. The Crown may then re-examine, call reply evidence or cross-examine the defence expert and the matter will unfold as proof generally does during a trial.

46 Secondly, the SCAJ found a difference between the type of scientific knowledge relied upon by the expert in S.A.B. - "international guidelines" relied upon by the expert in that case in rejecting a mutated DNA sample - and the "plateau" in this case. She concluded that the international guidelines were widely accepted in the scientific community. Respectfully, I see little difference. For the reasons articulated above, I am of the view that the notion of an approximate two-hour plateau in the elimination rate of alcohol in the blood stream has long been well-established in both the judicial and scientific worlds. Justice Deschamps' comment in Gibson/MacDonald, cited above, reflects this view, as does the agreed statement of facts and the analysis in Phillips. Moreover, it would appear from that analysis that the two-hour plateau forms the very basis for the s. 258(1)(c) presumption that breathalyzer readings taken within two hours of when the offence was alleged to have been committed are conclusive evidence of the accused's BAC at the time of the incident.

47 The reality is that if the expert did not rely on the assumption of a plateau, the result would be even worse for Mr. Paszczenko. Without allowing for the plateau, the effect of the elimination rate would be to elevate his BAC readings at the time of the accident because there would be two additional hours of elimination resulting in a "read-back" BAC of at least 20 milligrams per 100 millilitres higher. See Phillips, at pp. 160-161; R. v. Versage, 2008 ONCJ 80, at para. 39.

48 As outlined above, similar observations apply with respect to the "elimination rate" assumption, attacked in both appeals.

Shortfalls of the Reports

49 Finally, Mr. North and Mr. Zoppi both argued on behalf of their clients that there were shortfalls in the expert reports themselves - a definitional uncertainty, they say - as a result of which the courts should conclude the assumptions had not been established on the record. Counsel point out that the ability of the Crown - or, for that matter, the defence - to provide expert toxicology evidence by way of a report, pursuant to s. 657.3 of the Code, is an exception to the normal way in which evidence must be presented at trial. The procedure is sometimes referred to as a "procedural short cut", but counsel argue it should not become an "evidentiary short cut": the reports should not be "bare bones", but should have an explanation as to the meaning of the assumptions and why such assumptions are made. The "over 80" offence is, after all, a criminal offence; the accused is presumed to be innocent, and the Crown must prove its case with respect to all matters affecting criminal responsibility: R. v. Whyte, [1988] 2 S.C.R. 3.

50 I agree with these sentiments as far as they go, and it might well have been preferable if the reports here in question had been fuller in their explanations. However, as explained below, I would not conclude that the reports are entitled to no weight in these circumstances as a result of their somewhat abbreviated nature.

51 On behalf of Mr. Paszczenko, Mr. North submitted that the description of the "plateau" assumption in the toxicology report was simply inadequate to constitute evidence supporting the assumption, even on the theory that Mr. Wigmore was entitled to rely on scientific knowledge gained in the course of working in his field of expertise. The fourth assumption was described as "[a] plateau at the lower BAC estimation," with no further explanation. Mr. North says that is a meaningless phrase.

52 He points out that since the Paszczenko trial, the toxicology reports from the Centre of Forensic Sciences (with which Mr. Wigmore is associated) have been amended to provide a clearer and more meaningful description of the plateau factor. The revised reports now state:

> Allowance of a plateau of up to two hours.
>
> A plateau in the BAC represents a period of time in which there is no significant

> change in the BAC due to the rate of absorption of alcohol into the body being approximately equal to the rate of elimination of alcohol from the body. A plateau greater than two hours is rare. A plateau of less than two hours will result in an increased BAC at the lower limit of the projected range.

53 I agree that the revised statement is preferable to the abridged version provided by Mr. Wigmore in the present toxicology report (although even the revised report does not state that the plateau concept is widely used and acknowledged as reliable in this field of forensic toxicology). The revised version does provide a simple and brief explanation of what the "plateau" concept is and how it works. However, in the circumstances, I would not give effect to the argument that Mr. Wigmore's fourth assumption was so inadequately framed here - because there was no evidence of what the phrase means or any evidence to suggest that the notion of a plateau even exists - that no weight could be given to the assumption (and, therefore, to Mr. Wigmore's opinion).

54 First, as I have explained above, the concept of a "plateau" is well-accepted in the field of forensic science and has been recognized as such in the jurisprudence at least since the decision of this Court in Phillips. Secondly, there is no definitional uncertainty in the meaning of the word "plateau". It means what it says: the thing being measured is not rising or falling during the period mentioned. The thing being measured is the blood alcohol concentration. In short, during the "plateau" period, the assumed elimination rate is not being factored into the read-back calculation. As noted above, any plateau factor favours the accused; thus, whatever vagueness may arise from the words "at the lower BAC estimation" is of little real consequence.

55 Lastly, as the SCAJ in Paszczenko noted and the recent revised version of the toxicology report confirms, there has long been a standard form of presentation for these types of reports in these types of cases. They all refer to the same four factors or assumptions. Courts and counsel are familiar with them. I am satisfied that, in the circumstances of this case, the short form reference to a "plateau at the lower BAC estimation" was sufficient to signal that Mr. Wigmore's assumption related to the well-recognized two-hour plateau phenomenon (when using the lower rate of alcohol elimination) based upon the scientific knowledge gained within his field of expertise, and was therefore sufficient "evidence" to support that portion of his report in the absence of an evidentiary challenge by the defence.

56 Mr. Zoppi mounted his own definitional uncertainty attack on behalf of Mr. Lima in relation to the no bolus drinking assumption in Ms. Solbeck's expert report. To repeat, that assumption was expressed as follows:

> No rapid consumption of large quantities of alcoholic beverages shortly prior to the incident (commonly referred to as "no bolus drinking").

57 Mr. Zoppi argues that the report fails to define what "rapid consumption" or "shortly before" means or what quantity of alcohol would have to be consumed in what period of time to constitute "large quantities" and thereby establish bolus drinking. Some judges in the lower courts - including

the SCAJ in Paszczenko - have expressed similar reservations: see, for example, Lin. There may be cases where more precision with respect to these concepts becomes necessary. Suppose, for example, there was evidence that an accused had consumed 3 bottles of beer in the space of 20 minutes before the incident. Would that constitute bolus drinking? On the other hand, in Grosse, the evidence was that, in general, a person would have to consume the equivalent of 6 beers or 9 oz. of alcohol for bolus drinking to be a factor.

58 But judges are capable of understanding, in broad terms, what "rapid" consumption, "shortly before" and "large" quantities entail. There is nothing on the record in either the Lima or the Paszczenko case to suggest any consumption of alcohol in the period prior to the respective incidents, much less "rapid" consumption of "large" quantities. The lack of precision is therefore of little moment in these proceedings.

Judicial Notice

59 In Lima, the SCAJ concluded that he could take judicial notice of the accuracy of the "plateau" and "elimination rate" assumptions, since this Court had already accepted those assumptions - based on essentially the same facts and described in the same fashion - in Phillips. The SCAJ in Paszczenko refused to do so.

60 There is some debate in the jurisprudence about this. For example, in R. v. Rajeswaran, Duncan J. held that he was entitled to take judicial notice of the 10-20 milligram/hour elimination rate of alcohol in order to determine BAC at the time of driving, as did Langdon J. in R. v. Coulter, [2001] O.J. No. 5608 (S.C.J.). On the other hand, trial judges in R. v. Lin (Lampkin J.), R. v. Castro-Mendoza (K. Caldwell J.), R. v. Thompson (C.H. Paris J.), and R. v. Nauss (Zivolak J.), held that they could not.

61 It is technically unnecessary to resolve this debate, given the analysis outlined above. I am inclined to the view, however, that courts are entitled to take judicial notice (a) of the fact that the majority of human beings eliminate alcohol in a range of 10-20 milligrams of alcohol per 100 millilitres of blood per hour, and (b) of the fact that, after rising relatively quickly during the first 30 minutes or so after the last drink, a person's BAC generally hits a plateau for a period of up to two hours during which time the absorption rate and the elimination rate remain about equal and the BAC neither rises nor falls. I think this view is consistent with the evolving jurisprudence and with the experience of hundreds of trial judges across the country.

62 In R. v. Koh, Finlayson J.A. concluded, at p. 679, that "judicial notice may be taken of two kinds of fact: facts which are so notorious as not to be the subject of dispute amongst reasonable persons; and facts that are capable of immediate and accurate demonstration by resorting to readily accessible sources of indisputable accuracy." Moreover, "judicial notice is permissible where previous courts have proven a certain fact." See also Sopinka, Lederman & Bryant, The Law of Evidence in Canada, 3rd ed. (Toronto: LexisNexis Canada Inc., 2009), at paras. 19.13 and 19.17.

63 In Phillips, this Court dealt extensively with the underlying facts regarding the absorption and elimination of alcohol into and out of the blood and the measurement of BAC. It did so on the basis of an agreed statement of facts and the scientific basis underpinning those facts. Speaking for the Court, Blair J.A. stated at p. 160:

> Scientists have established that the BAC rises rapidly, as stated in paras. 5 and 6 of the agreed statement of facts, to a maximum or near maximum within approximately 30 minutes of the last drink. Thereafter, it remains relatively constant for a period of two hours after the alleged offence and then declines as alcohol is eliminated from the blood at the rate of 10 to 20 mg per 100 ml of blood per hour. In graphical terms BAC is often described as a sharply ascending curve in the first 30 minutes after consumption of the last drink, a plateau of approximately two hours and a gradually descending curve thereafter.

64 The one exception to the foregoing conclusion, Blair J.A. noted, was the "relatively rare cases where there has been both a large amount of alcohol consumed within a few minutes prior to the apprehended driving and where the Breathalyzer tests are commenced within about 30 minutes of the last alcohol consumption."

65 These conclusions were well-founded on the scientific literature and studies in the forensic toxicology field, to which the Court had been referred and which it referenced. There is no evidence here that the scientific evidence has changed since Phillips was decided. Indeed, as I noted earlier in these reasons, in Gibson/MacDonald, supra, Deschamps J. would have held that accepting an average rate of elimination of 15 milligrams per 100 millilitres of blood per hour (the mid-range between 10-20 milligrams) "... would amount only to acknowledging the factual findings of trial judges across the country."

66 In principle, therefore, I see no impediment to judges taking judicial notice of both the "plateau" and "elimination rate" assumptions underlying the expert toxicologist's reports. They are assumptions, with underlying facts, that "are capable of immediate and accurate demonstration by resorting to readily accessible sources of indisputable accuracy" in the scientific field of forensic toxicology and in the jurisprudence.

Disposition

67 For the foregoing reasons, I would allow the Crown's appeal in the Paszczenko matter, set aside the order for a new trial and restore Mr. Paszczenko's conviction. I would dismiss Mr. Lima's appeal.

R.A. BLAIR J.A.
R.J. SHARPE J.A.:-- I agree.
J.L. MacFARLAND J.A.:-- I agree.

1 The Crown alleges that much of the delay concerned the respondent's contact with duty counsel. A s. 10(b) *Charter* challenge was abandoned at the end of trial.

2 Loomis, "Blood Alcohol in Automobile Drivers: Measurement and Interpretation for Medicolegal Purposes" (1974), 35 Quart. J. Stud. 458.; Harding and Field, "Breathalyzer Accuracy in Actual Law Enforcement Practice: A Comparison of Blood-and Breath-Alcohol Results in Wisconsin Drivers" (1987), 32 Journal of Foren. Sci. 1235; Gullberg, "Variation in Blood Alcohol Concentration Following the Last Drink" (1982), 10 Journal of Police Science and Administration 289; Shajani & Dinn, "Blood Alcohol Concentrations Reached in Human Subjects After Consumption of Alcoholic Beverages in a Social Meeting" (1985), 18 Can. Soc. Forens. Sci. J. 38; Lucas, "The Breathalyzer - How it Works", McLeod et al., *Breathalyzer Law in Canada* (2nd ed., 1986), c. 24; Lucas, "Approved Screening Devices - How They Work", McLeod et al., ibid, c. 25; Dittmar & Dorian, "Ethanol Absorbtion After Bolus Ingestion of an Alcoholic Beverage. A Medico-Legal Problem." Part I: (1982) 15 Soc. Forens. Sci. J. 57. Part II: (1987), Soc. Forens. Sci. J. 61; Holzbecher and Wells, "Elimination of Ethanol in Humans" (1984), 17 Can. Forens. Sci. J. 182; Canadian Society of Forensic Science, Recommended Standards and Procedures of the Canadian Society of Forensic Science Alcohol Test Committee, Vol. 19, No. 3, pp. 164-222. Jones A.W. "Ultra-rapid rate of ethanol elimination from blood in drunken drivers with extremely high blood-alcohol concentrations" (2008) 122 Int. J. Legal Med. 129-134; Tam W.M., Yang C.T., Fung W.K. and Vincent K.K. Mok, "Alcohol metabolism of local Chinese in Hong Kong: a statistical determination on the effects of various physiological factors" (2006) 156 Foren. Sci. Int. 95-101; Norberg A., Jones A.W., Hahn R.G. and Gabrielsson, J. L. "Role of Variability in Explaining Ethanol Pharmacokinetics: Research and Forensic Applications" (2003) 42(1) Clin Pharmacokinet. 1-31; Stowell, A.R. and Stowell L.I. "Estimation of Blood Alcohol Concentrations after Social Drinking" (1998) Journal of Foren. Sci. 14-21; Winek C.L., Wahba, W.W. and Dowdell J.L. "Determination of absorption time of ethanol in social drinkers" (1996) 77 Foren. Sci. Int. 169-177.