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Case Note

CONTRACT FORMATION AND MISTAKE IN CYBERSPACE (AGAIN)

The Story So Far and Where to Next?

Quoine Pte Ltd v B2C2 Ltd
[2020] 2 SLR 20

Rules governing unilateral mistakes were developed in the context of contracts made directly between individuals. How do these rules apply in the digital age when individuals rely on algorithms to enter into contracts? A further challenge is posed by the earlier decision of *Chwee Kin Keong v Digilandmall.com* [2005] 1 SLR(R) 502, where the Court of Appeal recognised the doctrine of unilateral mistake in equity, departing from the English position in *Great Peace Shipping Ltd v Tsavliris Salvage (International) Ltd* [2003] QB 679; [2002] 3 WLR 1617; [2002] 4 All ER 689. How should the equitable doctrine be applied? In February 2020, the Singapore Court of Appeal in *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 ("*Quoine*") had the opportunity to consider some of these issues and clarify how these principles would apply in the context of algorithmic trading. This article examines some of the developments and issues raised in Quoine, and suggests where the law may further develop.

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I. Introduction

1 Conventional legal principles, such as those governing unilateral mistakes, were developed in the context when contracts were made

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directly between individuals. Challenges arise in the digital age when individuals resort to algorithms to help with their contracting. How do such conventional legal principles apply to modern contracting practices? An additional challenge is posed by the autochthonous developments to the doctrine of unilateral mistake in *Chwee Kin Keong v Digilandmall.com*[2] ("*Digilandmall*"), where the Singapore Court of Appeal recognised that there is such a doctrine in equity, departing from the English position in *Great Peace Shipping Ltd v Tsavliris Salvage (International) Ltd*.[3] How would the equitable doctrine apply? What should its scope be? These challenges were firmly brought to the front in the recent Singapore Court of Appeal decision in *Quoine Pte Ltd v B2C2 Ltd*[4] ("*Quoine*").

2 In many ways, *Quoine* is groundbreaking, not just for what the case stands for, but what the Singapore Court of Appeal has left open. For starters, Sundaresh Menon CJ (writing for the majority) in *Quoine* has tentatively left open the issue of whether Singapore should extend, under the doctrine of unilateral mistakes in equity, the type of operative mistakes beyond mistaken terms to include mistaken assumptions. If this is taken up in the future, this will mark a radical departure from the classical common law approach of *caveat emptor*, and a non-mistaken contracting party may be prevented from enforcing a contract where she has failed to correct her counterparty's mistaken assumption. The Singapore Court of Appeal has also raised some concerns on the unconscionability requirement in unilateral mistake in equity, which may warrant a reconsideration of the doctrine of unilateral mistakes as to terms. There is also Jonathan Mance IJ's radical dissent, where he suggests extending the doctrine of unilateral mistake (as to terms and assumptions) in equity to set aside transactions, even if the non-mistaken party (or a reasonable person in her shoes) had no knowledge of the counterparties' mistake at the time of contracting. This approach goes well beyond the classical model of protecting the contracting parties' autonomy and ensuring procedural fairness, towards ensuring substantive fairness in the exchange. The issues raised here are thus important not just for the development of contract law in Singapore but also for any jurisdiction considering whether their rules on unilateral mistake ought to be adapted for the cyberspace.

3 Part II[5] of this article sets out the facts in *Quoine*, which may be somewhat complex for those of us who are uninitiated in the world of algorithmic trading. The author then goes on to consider some aspects of

2 [2005] 1 SLR(R) 502.
3 [2003] QB 679; [2002] 3 WLR 1617; [2002] 4 All ER 689.
4 [2020] 2 SLR 20.
5 See paras 4–11 below.

the doctrine of unilateral mistake which the Singapore Court of Appeal had raised and suggest some ways which we may develop further. In Part III,[6] the article considers whether Singapore ought to recognise that non-disclosure of facts should allow a contract to be vitiated in equity and how this development may take place. In Part IV,[7] the article considers the unconscionability requirement in unilateral mistake as to terms in equity and argue that its development was due to a misstep taken in *Digilandmall*. Here, it is proposed that the doctrine of unilateral mistake as to terms ought to be subsumed into the rules governing offer and acceptance. If this approach is taken, it will do away with the doctrine of unilateral mistakes as to terms (at law or in equity), as well as the unconscionability requirement. Such an approach would also, arguably, eschew the requirement that the mistake as to terms must be fundamental. In Part V,[8] the article considers Menon CJ's clarification on whose knowledge and what knowledge suffices for the doctrine of unilateral mistake (as to terms and assumptions), in the context of algorithmic trading. It also considers Mance IJ's proposal of extending the doctrine of unilateral mistakes (as to terms and assumptions) to situations where the non-mistaken party had no knowledge of the mistake. The author argues that both approaches are best seen as starting points, and it may be necessary to further consider what are the appropriate limits for each of them.

II. Facts of *Quoine*

4 In this case, the appellant ("Quoine") operated a cryptocurrency exchange platform ("the Platform"). The use of the services provided by the Platform is governed by the Platform's terms of use, a contract between Quoine and the users of the Platform ("the Platform Agreement").[9] The respondent ("B2C2") was one of the traders who traded on the Platform. Both Quoine and B2C2 were also market-makers on the Platform, and placed buy and sell orders on cryptocurrencies on a regular and continuous basis at a publicly quoted price. In doing so, market-makers ensure that there is sufficient liquidity for the cryptocurrencies on the Platform, as market-makers are always ready to buy or sell such cryptocurrencies on the Platform.[10]

5 The Platform allows for, *inter alia*, margin trading, where trades are entered into using borrowed funds (including borrowed

6 See paras 12–19 below.
7 See paras 20–33 below.
8 See paras 34–54 below.
9 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [50(a)].
10 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [1].

cryptocurrencies). Margin traders may borrow funds from Quoine and their financing relationships are governed by margin contracts ("the Margin Contracts"),[11] providing assets in their accounts as collateral for the loans. A margin trader may, for example, take up a short position for a cryptocurrency pair that is being traded on the platform, such as Ethereum ("ETH")/Bitcoin ("BTC"). In taking a short position for ETH/BTC, a margin trader borrows ETH from a financier and sells it for BTC, with the expectation that the value of ETH will depreciate against BTC in the future. The short position is open with the initial sale of ETH for BTC, and the position is only closed when the margin trader finally sells the now held BTC back for ETH.[12] In the event that the collateral in the margin trader's account falls below a predetermined percentage of the loan, a margin call is triggered against the margin trader. The Platform automatically force-closes the margin trader's positions by placing market orders[13] on the Platform to close out the margin trader's open positions. This is known as a "margin sell-out position".[14]

6 The Platform monitors a margin trader's "live profit and loss" in respect of each open position ("live P&L"), for the purposes of determining how much collateral the margin trader has in its account. This live P&L is calculated by multiplying the quantity of borrowed cryptocurrency by the difference between its open price and its theoretical close price. The theoretical close price is calculated by simulating the closing of the margin trader's position against the current price ladder on the Platform's order book. The price ladder refers to the available buy and sell orders with bid and ask prices that are presently on the Platform's order book. Abnormally priced orders placed on the order book and/or an abnormally thin order book can affect the calculation of the margin trader's live P&L and cause the Platform to detect that the margin trader is in a margin sell-out position. In such circumstances, the Platform's operating system will automatically execute the force-closures through market orders to buy or sell the relevant currency at the best available price on the Platform.[15]

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11 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [50(b)].

12 If a trader takes a long position on the Ethereum ("ETH")/Bitcoin ("BTC") cryptocurrency pair, the trader buys ETH with BTC, with the expectation of ETH appreciating against the BTC and selling ETH in the future for a profit.

13 A market order refers to an order which is to be executed immediately at the best available current market price. The buyer or seller (as the case may be) indicates what they wish to trade and the platform automatically identifies the best available trade in the opposite direction. At the time of order placement, the trader will not know precisely what the exchange rate will be, only that it will be the best available price offered on the Platform at the time by a trader seeking to trade in the opposite direction. See *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [12(a)].

14 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [12].

15 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [13]–[14].

7 The buy and sell contracts on the Platform were conducted by way of algorithms. Quoine, however, had failed to make certain necessary changes to several critical operating systems on the Platform. This resulted in Quoine's software being unable to generate new ETH/BTC orders on the Platform for market-making purposes, causing the Platform's order book to gradually thin out. This affected margin traders' live P&L, causing the Platform to conclude that certain margin traders (in this case Pulsar Trading Capital and one Tomita (collectively "the Counterparties")) were in margin sell-out positions, thereby triggering margin calls against them. The Counterparties had earlier taken a short position on the ETH/BTC cryptocurrency pair, borrowing ETH from Quoine to purchase BTC.[16] The Platform automatically force-closed the margin traders' positions by placing market orders to buy ETH at the best available price on the Platform in order to repay the margin traders' ETH loans.[17]

8 As a result of the margin call, a total of 13 trades ("the Disputed Trades") were concluded. Under the Disputed Trades, B2C2 sold ETH to the Counterparties for BTC, at a rate of 9.999 BTC or 10 BTC for 1 ETH. This was approximately 250 times higher than the then prevailing market rate at which BTC was then exchanged for ETH (around 0.04 BTC for 1 ETH). This rate was pre-programmed by Boonen (B2C2's programmer) into B2C2's algorithm and was triggered when there was no or insufficient input from the Platform's order book.[18] B2C2 thus obtained a windfall from the trade, while the Counterparties had a negative BTC balance in their accounts. When Quoine became aware of the Disputed Trades, it unilaterally proceeded to cancel the trades, reversing the debit and credit transactions involving B2C2's account and the Counterparties.[19]

16 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [156].

17 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [27]–[28].

18 Where the Platform functions properly, B2C2's algorithm uses the Platform's buy or sell orders that are placed as a variable in determining B2C2's own quote for the buy or sell order B2C2 places on the Platform. The pre-programmed rate will, however, be triggered when the earlier variable does not exist. See *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [16]–[17].

19 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [29]–[30].

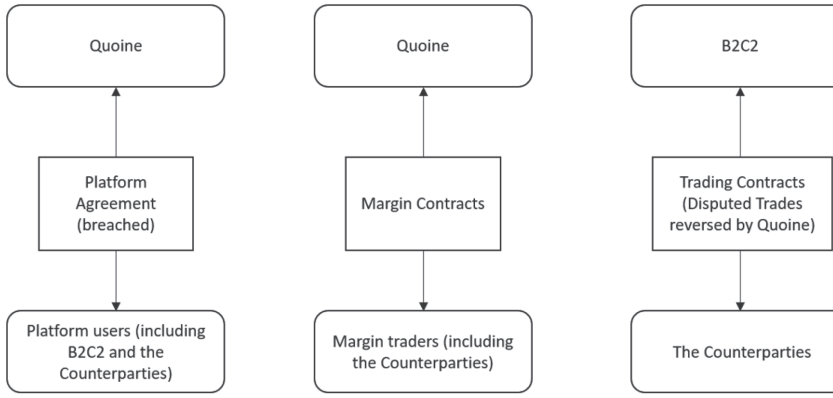

Figure 1. Contractual relationships between the parties

9 Before the High Court, B2C2 argued that Quoine's unilateral cancellation of the Disputed Trades and reversal of the settlement transactions was a breach of the Platform Agreement which stipulated that market orders were irreversible,[20] and/or breach of trust.[21] Quoine raised several defences,[22] of which "the most troubling and difficult in this case" was the doctrine of unilateral mistake at common law and in equity.[23] Quoine argued that the Counterparties' unilateral mistakes that[24] (a) it was necessary to close out their positions in response to their margin calls which the Platform made on them ("the First Mistaken Belief"), and (b) they were buying ETH for BTC under contracts at prices which accurately represented or did not deviate significantly from the true market value and/or price of ETH relative to BTC on 19 April 2017 ("the Second Mistaken Belief") meant that the contracts which

20 Under the Platform Agreement, it is provided that "[f]urthermore, once an order is filled, you are notified via the Platform and such an action is irreversible". This was interpreted to mean that the market orders placed are irreversible: see *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [136]–[137].

21 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [138].

22 These included implying terms entitling Quoine to reverse trades, incorporating a clause in a separate statement that entitles Quoine to reverse trades, and that it was necessary to reverse the trades so to prevent unjust enrichment. See *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [35]–[46] for a summary of the defences.

23 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [183].

24 Jonathan Mance IJ on appeal considered that it was queer that attention at the trial was focused on the Counterparties' mistakes and not on Quoine. It was Quoine whose computer was programmed to instruct the trades and as such the relevant state of mind should be on Quoine: see *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [188].

underlay the Disputed Trades ("the Trading Contracts")[25] were void on the basis of unilateral mistake at common law.[26] In the alternative, the same mistakes warranted setting aside the Trading Contracts under the doctrine of unilateral mistake in equity, and that B2C2's conduct in setting deep prices in its algorithms was unconscionable and amounted to sharp practice.[27] Given that the Trading Contracts could be set aside, Quoine argued that it was not in breach of the Platform Agreement or in breach of trust when it unilaterally reversed the transactions. The High Court had ruled against Quoine on these issues.

10 On appeal, the majority found that the defence of unilateral mistake was not made out by Quoine at common law or in equity. Menon CJ held that the Second Mistaken Belief was a mistaken assumption and not a mistake as to terms.[28] Menon CJ, however, left open the issue as to whether mistaken assumptions may qualify for relief in equity.[29] In doing so, Menon CJ proceeded with the assumption that there was an operative mistake and proceeded to consider what B2C2's knowledge was.[30] Menon CJ considered that B2C2 did not have actual or constructive knowledge of the mistake; thus, the doctrine of unilateral mistake was not made out.[31]

11 In his dissenting judgment, Mance IJ preferred the view that the defence of unilateral mistake was made out by Quoine in equity. Mance IJ did not draw a distinction between the types of mistake. Nevertheless, his Honour preferred the view that if the contracting parties know that there has been a fundamental mistake, as soon as a computerised transaction comes to their attention, where no detriment has occurred and no third party interests intervened, and where the mistake can be readily rectified, the law should set aside the transaction.[32]

III. Should non-disclosure of facts vitiate the contract?

12 At first instance, Simon Thorley IJ considered that the First Mistaken Belief was not a mistake as to a term of the contracts underlying

25 This refers to the contracts which came into existence when the Disputed Trades were concluded and governed the relationship between the parties to the Disputed Trades: see *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [4] and [50].
26 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [215].
27 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [232]–[236].
28 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [115].
29 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [92] and [115].
30 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [116].
31 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [126]–[128].
32 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [183] and [194].

the Disputed Trades,[33] an issue which seemingly was not contested on appeal.[34] On the other hand, Thorley IJ held that the Second Mistaken Belief was a mistake as to the term of the contracts underlying the Disputed Trades.[35] This finding, however, was reversed on appeal. The Singapore Court of Appeal considered that the prices were concluded by operation of the parties' respective algorithms and it was common ground that they had operated as they were meant to.[36] The precise mistake was thus a mistaken assumption on the part of the Counterparties as to how the Platform would operate (that is, the Platform would not fail). Given that the Second Mistaken Belief was not a mistake as to the terms of the Trading Contracts, but instead was a mistaken assumption as to the circumstances, this is not an operative mistake for the purposes of unilateral mistake at common law. This was thus sufficient to reject Quoine's arguments on unilateral mistake as to terms.

13 However, Menon CJ raised the question as to whether unilateral mistake in equity can extend beyond a mistake as to a term of the contract, such that a mistaken assumption about the circumstances under which the contract was or would be concluded can itself be an operative mistake.[37] Menon CJ noted that the English authorities[38] seemed to suggest that there is no equitable jurisdiction to vitiate a contract for unilateral mistake and even if there were, it is unclear if this extends beyond a mistake as to a term of the contract. Menon CJ cited the court's earlier decision in *Digilandmall* which suggested that the equitable doctrine could have regard to a wider and more open-ended category of fundamental mistake. *If the scope of operative mistake is extended in this manner, the non-mistaken party may not be allowed to enforce the contract if he had actual or constructive knowledge of the counterparty's mistaken assumption.* Consequently, non-disclosure of facts by the non-mistaken party may prevent the contract from being enforced by her. The onus is therefore on the non-mistaken party to correct the counterparty's mistaken belief, to preserve the enforceability of the contract. However, as the issue was not fully argued before the court and it was not necessary for the court to determine this question, this issue was left open.[39]

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33 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [220]–[222].
34 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [112].
35 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [228].
36 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [115].
37 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [90].
38 These authorities include *Great Peace Shipping Ltd v Tsavliris Salvage (International) Ltd (The Great Peace)* [2003] QB 679; [2002] 3 WLR 1617; [2002] 4 All ER 689; *Huyton SA v Distribuidora International de Productos Agricolas SA* [2004] 1 All ER (Comm) 402; and *Statoil ASA v Louis Dreyfus Energy Services LP* (*The Harriette N*) [2009] 1 All ER (Comm) 1035.
39 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [90]–[91].

A. Rethinking the caveat emptor *principle*

14 The suggestion that the Singapore courts could consider broadening the types of operative mistake to include mistaken assumptions would require a fundamental rethinking about the *caveat emptor* principle which underpins Singapore (and English) law. Under present orthodoxy, the onus is on contracting parties to make full enquiries before entering into contracts. Should they fail to do so, they have only themselves to blame.[40] This has shaped, *inter alia*, our approaches towards the closely related vitiating factor of misrepresentation. A clear distinction is drawn between mistaken assumptions which are induced by one contracting party to another (that is, misrepresentations) and those which are not so induced.[41] Self-induced mistaken assumptions have been held to be insufficient to justify rescission of the contract.[42] Even if one party expresses her mistaken assumption, the fact that the other party remained silent does not, without more, amount to an affirmation of that mistaken assumption.[43] In the absence of a duty to disclose or a duty to correct the mistaken party, if the non-mistaken party maintains its silence, the courts are slow to find that such silence will acquire a positive content.[44] Indeed, one scholar has noted, in the context of English law, that the law is "reluctant to impose such a duty except where there is a good reason for the particular duty in question".[45] To date, the approach taken by the Singapore courts towards pre-contractual disclosure is a limited one. Such disclosure is typically imposed only in specific situations, for example, in the context of an insured's duty of disclosure to the insurer,[46] in the context of fiduciaries contracting with their principals.[47]

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40 *Smith v Hughes* (1870–1871) LR 6 QB 597 at 603, *per* Cockburn LJ:

> I take the true rule too be, that where a specific article is offered for sale, without express warranty, or without circumstances from which the law will imply a warranty … and the buyer has full opportunity of inspecting and forming his own judgment, if he chooses to act on his own judgment, the rule caveat emptor applies … He has himself to blame.

41 A misrepresentation by one party which induces the other to enter into a contract, even if made innocently, can be set aside by the party so induced. See *Redgrave v Hurd* (1881) 20 Ch D 1.

42 *Eng Hui Cheh David v Opera Gallery Pte Ltd* [2009] SGCA 49 at [8].

43 *Broadley Construction Pte Ltd v Alacran Design Pte Ltd* [2018] 2 SLR 110.

44 *Broadley Construction Pte Ltd v Alacran Design Pte Ltd* [2018] 2 SLR 110 at [28].

45 John Cartwright, "Unilateral Mistake in the English Courts: Reasserting the Traditional Approach" [2009] Sing JLS 226 at 232.

46 See the oft-cited decision *Carter v Boehm* (1766) 3 Burr 1905; (1766) 97 ER 1162, which has been endorsed in Singapore in *Tat Hong Plant Leasing Pte Ltd v Asia Insurance Co Ltd* [1993] 1 SLR(R) 728.

47 For example, a director, as a fiduciary to his company, owes a duty to disclose his personal interests in transactions of a company at civil law: see the oft-cited decision of *Dayco Products Singapore Pte Ltd v Ong Cheng Aik* [2004] 4 SLR(R) 318. A director

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15 Nevertheless, in several other jurisdictions such as France, Germany and the US, non-disclosure of facts by a non-mistaken party may vitiate contracts generally.[48] Such a divergence in approaches raises the question whether Singapore law is correct in retaining this individualist attitude, or whether it should move towards a rule penalising non-disclosure? It is submitted that there are strong arguments for recognising a broader requirement for disclosure. In *Smith v Hughes*[49] the present state of the law was considered morally questionable, with Cockburn LJ observing that "a man of tender conscience or high honour would be unwilling to take advantage of the ignorance of the seller".[50] Such an approach arguably violates the Kantian categorical imperative of equal concern and respect. Why should the mistaken party's interests be sacrificed (without her informed consent) and she be used as a means to the ends of others?[51] From an economic efficiency perspective, the general thrust has been to favour disclosure. Bargains made with more information between parties are generally more efficient and improve the functioning of free markets. Disclosure could also reduce the costs incurred by one party when searching for information which the other party already has.[52] On the other hand, there is the equally strong argument that acquisition of information may be costly and to require that the information be disclosed without compensation would provide a disincentive for parties to search for information.[53]

16 These tensions can be easily illustrated with the following hypothetical: *A* owns a painting which she considers to be worthless and wishes to sell it to free up space in her home. *B*, however, upon her own inspection and investigation, discovers that the painting is a da Vinci. *B* chooses not to disclose her superior knowledge, despite

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also has a statutory duty to disclose such interests under s 156(1) of the Companies Act (Cap 50, 2006 Rev Ed).

48 See Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at p 77, where the learned author surveys several jurisdictions approaches towards mistake, including the Commonwealth nations, the European nations and the US, and concludes that the vast majority of the jurisdictions outside the Commonwealth has a general duty of disclosure.

49 (1870–1871) LR 6 QB 597.

50 *Smith v Hughes* (1870–1871) 6 QBD 597 at 604.

51 Michael J Trebilcock, *The Limits of Freedom of Contract* (Boston: Harvard University Press, 1993) at pp 117–118.

52 See generally, for the economic considerations in this area of law, Anthony Kronman, "Mistake, Disclosure, Information, and the Law of Contracts" (1978) 7 J Legal Studies 1; Melvin A Eisenberg, *Foundational Principles of Contract Law* (Oxford: Oxford University Press, 2018) at p 597.

53 See Ewan McKendrick, *Contract Law* (London: Palgrave, 2017) ch 12; Anthony Kronman, "Mistake, Disclosure, Information, and the Law of Contracts" (1978) 7 J Legal Studies 1; Melvin A Eisenberg, *Foundational Principles of Contract Law* (Oxford: Oxford University Press, 2018) at p 598.

A saying that she is happy with *B* taking junk off her hands. Morally, such non-disclosure could be viewed as sharp dealing. However, if *B* discloses her investigative results to *A* before conclusion of the contract, *A* may now put the painting up for an auction, driving up the price of the painting. *B* may have incurred costs from which no benefits will now accrue. Furthermore, *B*'s returns may only be moderate, if *B* had engaged in other non-productive searches.[54] Any proposed refinement to the doctrine of unilateral mistake in equity would thus have to be flexible enough to accommodate these competing interests.

B. Two possible approaches for reform

17 How do we chart the way forward?[55] One possible way forward would be to align the present test closer towards that in the Principles of European Contract Law ("PECL"). Article 4:103 of the PECL provides that:

> Article 4:103: Fundamental Mistake as to Facts or Law
>
> (1) A party may avoid a contract for mistake of fact or law existing when the contract was concluded if:
>
> (a) …
>
> (ii) the other party knew or ought to have known of the mistake and it was *contrary to good faith and fair dealing to leave the mistaken party in error*; [and]
>
> (b) the other party knew or ought to have known that the mistaken party, had it known the truth, *would not have entered the contract or would have done so only on fundamentally different terms*.
>
> (2) However, a party may not avoid the contract if:
>
> (a) in the circumstances its *mistake was inexcusable*, or
>
> (b) *the risk of the mistake was assumed*, or in the circumstances should be borne, by it.
>
> [emphasis added]

18 The requirements emphasised above in Art 4:103(1) of the PECL could be integrated into the unconscionability requirement (or replace

54 Ewan McKendrick, *Contract Law* (London: Palgrave, 2017) at para 12.1; Melvin A Eisenberg, *Foundational Principles of Contract Law* (Oxford: Oxford University Press, 2018) at p 598.

55 For a more detailed consideration of what other models Singapore could adopt, see Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at p 77.

such requirement)[56] for the test of unilateral mistake in equity. Such an approach would have the benefit of clarifying what unconscionable conduct specifically means, and allow for a balancing of the competing interests as expounded above.[57] These requirements also mirror the language of "sharp practice" and "impropriety" as expounded by the Court of Appeal in *Digilandmall*.[58] Furthermore, the requirements in Art 4:103(2) of the PECL strikes an appropriate balance between the parties, as it is concerned with not only the conduct of the non-mistaken party but also whether the mistaken party is deserving of protection.[59] It should be noted that for mistaken assumptions, relief is only granted in equity here, regardless of whether the knowledge of the non-mistaken party was actual or constructive. This is consistent with the Court of Appeal's theoretical basis for unilateral mistakes in equity, which is to achieve "the ends of justice in appropriate cases", and serves as an excuse for the mistaken party to vitiate the contract.[60] Here, the effect of establishing unilateral mistake is asymmetrical and only the mistaken party is given the possibility of setting aside the contract. In contrast, unilateral mistake at common law is concerned with whether, under the objective theory of contract formation, the parties have reached an agreement. Where there

56 For a unilateral mistake to warrant relief in equity, the non-mistaken party must have, *inter alia*, constructive knowledge of the mistake, and that there must unconscionable conduct or sharp practice on her part. See *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [62]–[83].

57 *Ie*, whether it is contrary to good faith and fair dealing to leave the mistaken party in error would thus require a consideration of whether the applicable interests as discussed in para 15 above justifies setting aside the contract. Art 4:107(3) of the Principles of European Contract Law requires the court, in considering whether it will be contrary to good faith and fair dealing to leave the mistaken party in error, to consider factors such as (a) the special expertise of the non-mistaken party; (b) the cost of acquiring the relevant information; (c) whether the mistaken party could reasonably acquire the information itself; and (d) the apparent importance of the information to the mistaken party. This also mirrors the approach proposed in Melvin A Eisenberg, *Foundational Principles of Contract Law* (Oxford: Oxford University Press, 2018) at p 599, which recognises that in most cases, moral and efficiency reasons would support disclosure. Disclosure should be denied when it entails significant efficiency costs. The author proposes more specific rules in given classes of cases and their specific interest balances.

58 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [77].

59 See also Melvin A Eisenberg, *Foundational Principles of Contract Law* (Oxford: Oxford University Press, 2018) at pp 617–620, where the author suggests that disclosure is not required if: the risk that the assumption of the unknowing party was allocated to her by the contract or trade practice; or the unknowing party was on notice that her mistaken assumption was unfounded, failed to conduct a reasonable search, or both; or the social context in which the transaction occurred is a game in which buyers troll for mistakes by the sellers.

60 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [89].

is no correspondence between offer and acceptance, there is no contract and neither party may insist on the putative contract being performed.[61]

19 Alternatively, Singapore can retain its present approach, which imposes an obligation to disclose in a piecemeal fashion rather than a general rule relating to non-disclosure of facts. At present, aside from the earlier examples, disclosure is also required, *inter alia*, in contracts involving the sale of goods[62] as well as in consumer contracts.[63] This approach, whilst superficially more limited than the approach taken in the PECL, may be functionally equivalent given the breadth of existing disclosure duties. On the upside, such an approach may have the benefit of certainty, given that the new situations in which disclosure is required will be clearly identified.

IV. Reconsidering unilateral mistake as to terms in Singapore

A. Tension between the unconscionability requirement and constructive knowledge

20 In *Quoine*, the Singapore Court of Appeal reaffirmed the test for unilateral mistakes in equity: (a) the mistake must be as to terms; (b) the mistake must be fundamental; (c) the non-mistaken party had constructive knowledge of the mistake; and (d) the non-mistaken party must have engaged in some *unconscionable conduct* in relation to that mistake.[64] However, the requirement of unconscionable conduct had caused some discomfort with the Singapore Court of Appeal. In his dissenting judgment, Mance IJ perceptively pointed out that the *additional requirement of unconscionability* in unilateral mistake in equity seemed to relate to behaviour of the non-mistaken party with *actual knowledge* of the mistake, such as snapping up the mistakenly priced offer.[65] How then is the equitable doctrine different from the common law doctrine

61 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [81]; see also paras 32–33 below.

62 For example, s 14(2) of the Sale of Goods Act (Cap 393, 1999 Rev Ed) provides that where a seller sells goods in the course of a business, there is an implied condition that the goods supplied under the contract are of satisfactory quality. The seller is able to escape liability if defects are specifically drawn to the buyer's attention before contract is made: see s 14(2C).

63 See Part 1, para 20 of the Second Schedule to the Consumer Protection (Fair Trading) Act (Cap 52A, 2009 Rev Ed), which provides that the omission to provide a material fact to a consumer, using small print to conceal a material fact from the consumer or misleading a consumer as to a material fact, in connection with the supply of goods or services, is an unfair practice by the supplier.

64 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [90].

65 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [173].

of unilateral mistake, given that both doctrines now require the non-mistaken party to have actual knowledge of the mistake?

21 Menon CJ also recognised that there is a "potential tension between requiring, on the one hand, that unconscionability to be shown, this necessarily being a subjective inquiry premised on what the non-mistaken party actually knew … and, on the other, that the non-mistaken party have at least constructive knowledge of the mistake, this being, as we have already noted, an objective inquiry".[66] Menon CJ, however, decided that it was not necessary to resolve this tension in the present case.[67]

B. Reconsidering constructive knowledge and subsuming mistake as to terms in contract formation

22 Why is there an unconscionability requirement in the first place? To understand this, it is necessary to trace the development of the equitable doctrine of unilateral mistake. In *Chwee Kin Keong v Digilandmall.com Pte Ltd*[68] ("*Digilandmall (HC)*"). V K Rajah JC (as he then was) was concerned about whether, at common law, actual knowledge of the mistake was needed, or if constructive knowledge would suffice for the doctrine of unilateral mistake. He held that constructive knowledge of the mistake by a non-mistaken party would render a contract void at common law.[69] Rajah JC noted that while academic texts seemed unclear on whether an operative mistake needed only to be apparent, that was (then) the approach taken in other common law courts.[70]

23 The Singapore Court of Appeal in *Digilandmall* disagreed, taking the view that the *concept of constructive notice is an equitable concept*, citing *The English and Scottish Mercantile Investment Co, Ltd v Brunton*[71] ("*Brunton*"). The Singapore Court of Appeal considered that the Canadian cases were not instructive as to the common law, given the fused approach towards common law and equitable principles.[72] In this regard, the Singapore Court of Appeal considered references to constructive knowledge in the English decision of *OT Africa Line Ltd v Vickers*[73] to be merely a step in inferring what the actual knowledge of the

66 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [109].
67 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [110].
68 [2004] 2 SLR(R) 594.
69 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2004] 2 SLR(R) 594 at [149]–[150].
70 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2004] 2 SLR(R) 594 at [109].
71 [1892] 2 QB 700. See also *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [53].
72 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [46].
73 [1996] 1 Lloyd's Rep 700.

non-mistaken party was.[74] In doing so, the Singapore Court of Appeal accepted that constructive knowledge would only suffice in equity for unilateral mistakes as to terms, with the result that such contracts are only voidable. Given that constructive notice is a concept of equity, the Singapore Court of Appeal then further held that intervention is only justified if the conscience of the court can be invoked, and thus required factors such as "sharp practice" or "unconscionable conduct". Constructive knowledge alone cannot invoke equity's conscience.[75]

24 The key plank in the reasoning of *Digilandmall* is that constructive notice, at least in this context, is a creature of equity and relief can only be granted if the court's conscience is so affected. However, this development is a misstep. It is unsound in principle and the better view is that constructive knowledge of the mistake by the non-mistaken party suffices to set the contract aside at common law. If this argument is correct, there will be no need for an unconscionability requirement for mistake as to terms (as opposed to mistaken assumptions).[76]

25 The reasoning of the Court of Appeal in *Digilandmall* is problematic for two reasons. First, the view that *OT Africa Line Ltd v Vickers* is concerned with actual knowledge of the non-mistaken party is not a universally shared one.[77] Second, the reliance on *Brunton* is mistaken, given that the statement was made in the context of protecting prior proprietary interests and apparent authority. In *Brunton*, debentures were issued by a company, secured by a floating charge over all its property. The debenture contained a negative pledge clause, preventing the creation of any security over the company's property in priority to the debentures. The company, however, granted security over certain moneys due from an insurance company, in return for a loan from the respondents. The dealings by the company could be upheld by the respondents on the basis that there was apparent authority. The issue was

74 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [52].

75 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [76].

76 See the discussion at para 18 above.

77 Some texts consider the decision, as well as the earlier decision of *Centrovincial Estates v Merchant Investors Assurance Co Ltd* [1983] Com LR 15, to have recognised that the contract may be set aside at common law if the unilateral mistake of one party ought reasonably to have been known about by the other: see Andrew Burrows, *A Restatement of the English Law of Contract* (Oxford: Oxford University Press, 2016) at p 181. See also Jack Beatson, Andrew Burrows & John Cartwright, *Anson's Law of Contract* (Oxford: Oxford University Press, 2016) at p 277: "Moreover, a mistake by one part of which the other ought reasonably to have known will suffice." Other texts prefer to consider that whilst there is no clear authority, the decision suggests so: see *Chitty on Contracts* (Hugh Beale ed) (London: Sweet & Maxwell, 33rd Ed, 2019) at para 3-023; Edwin Peel, *Treitel on the Law of Contract* (London: Sweet & Maxwell, 14th Ed, 2015) at para 8-050, fn 276.

thus whether the respondents had actual or constructive notice of the negative pledge – presumably if they did so, there would be no apparent authority to talk of.[78] The statement by Lord Esher MR that the doctrine of constructive notice is wholly equitable should be read in light of this context,[79] where the courts are concerned to what extent protection of a prior proprietary interest should be given.[80] To read the statement broadly and hold that constructive notice is only of concern to equitable doctrines would be incorrect in principle. It is *necessary to consider the function of constructive notice in the context of contract law*, which may not be the same function (and thus not subject to the same rules) served by constructive notice in its traditional role.[81]

26 It is submitted that the better view is at common law, constructive notice of the mistake as to terms by the non-mistaken party should justify finding that there is no contract (that is, void). Constructive notice in the formation of contracts serves a *different function* than that in property law. Contract law has always been concerned with the objective intentions of the parties, rather than the subjective intentions of the parties. The justification to this lies in the desire to ensure certainty and protection of reasonable expectations, as well as to protect the autonomy-enhancing institution of contract.[82] "Promisee Objectivity"[83] requires the parties intentions to be ascertained from the *perspective of the contracting party who is observing the other's conduct*, assuming the *honesty and reasonableness of that party* engaged in the conduct in the context of the parties' dealings.[84] Constructive notice of the mistaken terms is consistent with, and can be subsumed under the Promisee Objectivity approach

78 See the analysis of the decision in Tan Cheng Han, "The Negative Pledge As a 'Security' Device" [1996] Sing JLS 415 at 418.

79 *The English and Scottish Mercantile Investment Co Ltd v Brunton* [1892] 2 QB 700.

80 This is similar to the observation made by Lord Scott in *Royal Bank of Scotland plc v Etridge (No 2)* [2002] 2 AC 773; [2001] 3 WLR 1021; [2001] 4 All ER 449 at [143], where he notes that the doctrine of notice as expounded by Lord Browne-Wilkinson in *Barclays Bank plc v O'Brien* [1994] 1 AC 180; [1993] 3 WLR 786; [1993] 4 All ER 417 "is a doctrine that relates primarily and traditionally to the priority of competing property rights".

81 *Royal Bank of Scotland plc v Etridge (No 2)* [2002] 2 AC 773; [2001] 3 WLR 1021; [2001] 4 All ER 449 at [143], *per* Lord Scott, "It is, in my opinion, important to recognise that constructive notice, in cases such as those now before the House, is serving a different function from that served by constructive notice in its traditional role and is not necessarily subject to the same rules."

82 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 348.

83 Promisee Objectivity is also defined at para 29 below.

84 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 349. See also

(cont'd on the next page)

towards contract formation at common law. It is unnecessary to engage in a separate enquiry to ascertain the gravity of the mistake or whether it would be unconscionable to deny enforcement of the putative contract in equity.

27 In the context of unilateral mistakes as to terms, the question asked in *Smith v Hughes* – whether the contract was for "oats" or "old oats" – thus breaks down to two under this approach:

> (a) What did each party's conduct mean, from the perspective of a reasonable person in the recipient's shoes?
>
> (b) Did the parties' objective intentions coincide?[85]

In such a situation, if the seller had neither promised nor represented that the oats were "old", but a reasonable person in the seller's shoes would know that the buyer did not intend to contract on the seller's terms (that is, a reasonable person in the seller's shoes would understand the buyer was accepting an offer for "old oats" and not "oats"), there would be no agreement between the parties.[86]

28 Nevertheless, it is conceded that the proposed approach is not supported by Singapore law as it now stands. In *Digilandmall (HC)*, there is some uncertainty in the approach taken by Rajah JC. On one hand, Rajah JC took the view that where unilateral mistake is pleaded, the very existence of agreement is denied and in contrast, where common mistake is pleaded, the presence of agreement is admitted, which lends

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The Law of Contract in Singapore (Andrew Phang Boon Leong ed) (Singapore: Academy Publishing, 2012) at para 10.144.

85 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 356.

86 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 358. See also Ewan McKendrick, *Contract Law* (London: Palgrave, 2017) at para 2.2, where the author also argues that it is not necessary to have resort to a purely subjective test to explain the outcome of *Hartog v Colin and Shields* [1939] 3 All ER 566. It can be accommodated within an objective test on the basis that the reasonable person in the position of the claimants would have known that the offer made by the defendants did not reflect their true intention. The same position is taken in other seminal texts such as John Cartwright, *Misrepresentation, Mistake and Non-Disclosure* (London: Sweet & Maxwell, 5th Ed, 2019) at para 13-22; Gareth Spark, *Vitiation of Contracts: International Contractual Principles and English Law* (Cambridge: Cambridge University Press, 2013) at p 136; *Chitty on Contracts* (Hugh Beale ed) (London: Sweet & Maxwell, 33rd Ed, 2019) at para 3-023 and *The Law of Contract in Singapore* (Andrew Phang Boon Leong ed) (Singapore: Academy Publishing, 2012) at para 10.144.

some support for grounding unilateral mistakes as to terms under the formation analysis.[87] Unfortunately, Rajah JC then considered that elements of offer and acceptance in each transaction in the case were satisfied and proceeded to conclude (conflictingly) that there was no *consensus ad idem* given the unilateral mistake, which suggests a two-stage inquiry.[88] Similarly, the Court of Appeal adopted the two-stage approach, considering that the doctrine of unilateral mistake as to terms was an exception to the objective theory of contract, and that the law "should not go to the aid of a party who knows that the objective appearance does not correspond with reality".[89] This approach also has some support from commentators, who argue that the basis of unilateral mistake lies the failure of the non-mistaken party to meet a certain standard of conduct in pre-contractual negotiations. The non-mistaken party is thus disentitled from relying on the objective theory hold the mistaken party to the literal meaning of the terms of the contract.[90]

29 The divergence between the proposed approach and prevailing case law stems from the different theories of objectivity applied. Objectivity may be assessed by adopting the view of a reasonable person from three perspectives:[91] (a) an onlooker, independent of the contracting parties ("Detached Objectivity");[92] (b) the contracting party making the promise ("Promisor Objectivity"); or (c) the contracting party seeking to enforce the promise (Promisee Objectivity). The approach taken by both the High Court and Court of Appeal in *Digilandmall* seems to be a form of Detached Objectivity, given that the formation analysis was not considered from the perspective of either contracting party. The doctrine of unilateral mistake is thus considered to be a departure from

87 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2004] 2 SLR(R) 594 at [106].

88 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2004] 2 SLR(R) 594 at [134] and [149].

89 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2005] 1 SLR(R) 502 at [30]–[31].

90 Yeo Tiong Min, "Unilateral Mistake in Contract: Five Degrees of Fusion of Common Law and Equity" [2004] Sing JLS 227 at 229.

91 William Howarth, "The Meaning of Objectivity in Contract" (1984) 100 LQR 265. See also Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 351.

92 This approach is oft associated with that taken by Denning LJ in *Solle v Butcher* [1950] 1 KB 671 at 691; [1949] 2 All ER 1107 at 1119:

> [O]nce a contract has been made, that is to say, once the parties, whatever their inmost states of mind, have to all outward appearances agreed with sufficient certainty in the same terms on the same subject matter, then the contract is good unless and until it is set aside … Neither party can rely on his own mistake to say it was a nullity from the beginning, no matter that it was a mistake to which his mind was fundamental, and no matter that the other party knew that he was under a mistake.

the Detached Objectivity view of agreement.[93] It is, however, submitted that the proper theory to be adopted is of Promisee Objectivity. Detached Objectivity is not supported by the rationales for objectivity, such as protecting the contracting parties' reasonable expectations and the practice of contracting, and it may impose a contract on the parties for which both of them do not want.[94] The Promisor Objectivity theory, on the other hand, fails to protect the reliance and expectations of the observer, given that the conduct is assessed from the perspective of the party making the promise. Strong arguments have been made that Promisee Objectivity is the only perspective which satisfies all justifications for objectivity,[95] and is the approach supported by the weight of authority,[96] including *Quoine*.[97]

30 Given the above reasons, it is submitted that a non-mistaken party's actual or constructive notice of her counterparty's mistake as to *terms* means that under the Promisee Objectivity theory, the parties were never in agreement. Here, the contract is thus void and neither party is entitled to enforce the putative contract. This approach means that there is no separate doctrine of unilateral mistake as to terms in common law or equity. However, there may be some room for a doctrine of unilateral mistake as to *assumptions* in equity, which serves as a legal excuse for

93 For a similar problem in Australia, see David McLauchlan, "Objectivity in Contract" (2005) 24(2) UQLJ 479 where he criticises the High Court of Australia for adopting an extreme form of Detached Objectivity in *Taylor v Johnson* (1983) 151 CLR 422, resulting in unilateral mistakes being analysed as a separate stage from contract formation and rendering the putative contract voidable only. See *Taylor v Johnson* (1983) 151 CLR 422 at 428.

94 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 350.

95 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at p 350. See para 26 above for the justifications to the objective approach in contract formation.

96 See the oft-cited decision of *Tribune Investment Trust Inc v Soosan Trading Co Ltd* [2000] 2 SLR(R) 407 at [40], where the Singapore Court of Appeal endorsed the approach of Promisee Objectivity, stating: "[T]he language used by one party, whatever his real intention may be, is to be construed in the sense in which it would reasonably be understood by the other."

97 *The Law of Contract in Singapore* (Andrew Phang Boon Leong ed) (Singapore: Academy Publishing, 2012) at para 10.144, where the learned author makes the same argument that "the exceptional consideration of the parties' subjective intentions is not actually a departure from an 'objective' view of agreement, if one adopts the theory of 'promisee objectivity'", and that "there is no contract where the non-mistaken party knows, or indeed ought to know, that the mistaken party does not intend to contract on the intended terms". *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [81] cited this very paragraph, but had unfortunately omitted the phrase "or indeed ought to know".

mistaken party to escape a validly formed contract, given the suggestion by the Singapore Court of Appeal in *Quoine* earlier on.[98]

C. Implications on the fundamental mistake requirement

31 One implication from this proposal is that, having situated the unilateral mistake as to terms analysis in contract formation, the requirement that the mistake must be fundamental must be abandoned in Singapore. In *Quoine*, the Singapore Court of Appeal reaffirmed its earlier decision of *Digilandmall* that the mistake must be as to a fundamental term of the contract, for the doctrine of unilateral mistake in common law and equity.[99] Some academics take the view that the fundamentality requirement is implicit in earlier decisions relating to mistakes as to terms.[100]

32 Nevertheless, this cannot be correct as a matter of principle. Mistake of terms goes towards issues on formation and contents of the contract, raising issues such as offer and acceptance. Mistaken assumptions, in contrast, serve as an excuse for the mistaken party and go towards vitiating the contract. The focus of the former is thus whether parties have actually reached agreement, whilst the latter focuses on whether, despite the parties' objective agreement, one or more of the parties should be excused from the contract given the mistaken assumption.[101]

33 It is trite law that for there to be a valid offer and acceptance, there must be an exact coincidence between the terms contained in the offer and the terms accepted.[102] Consider the following scenario: Party *A*'s offer, objectively ascertained from the perspective of Party *B*, is for terms D, E and *F*. Nevertheless, Party *B*, being subjectively mistaken as to Party *A*'s offer, conducts herself such that a reasonable person in

98 See the discussion at paras 12–19 above.

99 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [80].

100 See, *eg*, *The Law of Contract in Singapore* (Andrew Phang Boon Leong ed) (Singapore: Academy Publishing, 2012) at paras 10.166–10.167; Andrew Phang, "Contract Formation and Mistake in Cyberspace – The Singapore Experience" (2005) 17 SAcLJ 361 at 387; Yeo Tiong Min, "Unilateral Mistake in Contract: Five Degrees of Fusion of Common Law and Equity" [2004] Sing JLS 227 at 234. The view taken in Edwin Peel, *Treitel on the Law of Contract* (London: Sweet & Maxwell, 14th Ed, 2015) at is that while there seems to be no such requirement, the author prefers the position that such a mistake must be fundamental.

101 Mindy Chen-Wishart, "Contractual Mistake, Intention in Formation and Vitiation: The Oxymoron of *Smith v Hughes*" in *Exploring Contract Law* (Jason Neyers, Richard Bronaugh & Stephen Pitel eds) (London: Hart Publishing, 2009) at pp 368–371.

102 *Butler Machine Tool Co v Ex-Cell-O Corp (England)* [1979] 1 WLR 401; [1979] 1 All ER 965.

Party *A*'s shoes would understand that Party *B*'s acceptance is to terms D, E and *G*. The very fact that there is no coincidence of offer and acceptance must mean that there *is no contract*. A mistake as to a term thus involves the inclusion or exclusion of a term of a contract, making it an entirely different contract regardless of how minor the term is.[103] To hold otherwise would be to depart from the mirror-image approach utilised in oft-cited decisions such as *Gay Choon Ing v Loh Sze Ti Terence Peter*[104] and *Butler Machine Tool Co v Ex-Cell-O Corp (England)*.[105]

V. Algorithmic trading and adapting the unilateral mistake rules

34 Algorithmic trading poses a different set of problems from normal contracting. Under present rules, a unilateral mistake as to terms (and perhaps assumptions) can only warrant relief if the non-mistaken party knew (at common law) or ought to have known (in equity) about the mistake.[106] This knowledge must accrue prior to the contracts being entered into.[107] However, where parties entrust their dealings to computers who can have no such consciousness, how will parties ever be aware of the mistake until after the very contracts have been entered into?

35 The developments in Singapore are likely to be of relevance to other jurisdictions, given that this issue is being raised for the first time in the context of algorithmic trading and the formation of contracts by such means. Two different approaches were taken in *Quoine* in response to this problem, which will be briefly described and evaluated below. These developments may serve as different models for which other jurisdictions may consider, in developing their laws.

A. Mance IJ in Quoine*: The Wide Approach*

36 At High Court, Quoine argued that the proper approach towards unilateral mistake where algorithmic trading is involved is that the court should "intervene where the trade is clearly erroneous and it would be unjust to allow the trade to stand having regard to the circumstances in which it was executed".[108] Here, it is necessary to consider what the contracting parties were likely to have known and intended if,

103 Gareth Spark, *Vitiation of Contracts: International Contractual Principles and English Law* (Cambridge: Cambridge University Press, 2013) at p 31.
104 [2009] 2 SLR(R) 332.
105 [1979] 1 WLR 401; [1979] 1 All ER 965.
106 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [99].
107 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [125].
108 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [196].

hypothetically, they had met on the "floor of the exchange" for the purpose of entering into the Disputed Trades ("the Wide Approach").[109]

37 On appeal, Mance IJ expressed much sympathy with the Wide Approach.[110] Mance IJ pointed out that in contracts completed by human intervention, the court's approach allows it to consider the state of mind of each party in light of the surrounding circumstances. If one party mistakenly refers to a price per "pound" rather than per "piece", the other may know that a wholly mistaken word had been used in light of the state of the market.[111] The Narrow Approach,[112] however, *omits* the important element in the unilateral test, namely whether there was anything "drastically unusual about the surrounding circumstances or the state of the market to explain on a rational basis why such abnormal prices could occur, or whether the only possible conclusion was that some fundamental error had taken place".[113] In such a situation, Mance IJ considered that while the introduction of computer carried risks, they do not include the risk of being bound by algorithmic contracts, which could only be the result of some fundamental error in the normal operation of the computers involved. Mance IJ thus preferred the approach of laying down a default rule, which was in line with the natural expectations of reasonable traders.[114]

38 Mance IJ thus held, in his dissenting judgment, that such contracts entered into by deterministic algorithms could be set aside, if it would at once have been perceived by a reasonable person that some fundamental error had occurred.[115] It is not necessary to show whether B2C2, from the perspective of an entity using deterministic algorithms, had actual knowledge or constructive notice of the mistake.[116] For

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109 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17at [200].

110 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [194], *per* Mance IJ:

> In my opinion, it is necessary to revisit the Judge's refusal to take as the relevant test what Mr Boonen or anyone in his position could or would have known or believed, if he or they had known of the circumstances which have actually occurred … If it would at once have been perceived that some fundamental error had occurred, relief should be available.

111 This is a reference to the oft cited decision of *Hartog v Colin and Shields* [1939] 3 All ER 566.

112 See para 39 below.

113 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [193].

114 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [196].

115 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [194].

116 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [204]

> The question in the present case is not whether B2C2 had constructive notice, because constructive notice depends, like actual knowledge, on human involvement during the relevant transaction. The present case is one where the law needs to fashion an appropriate principle to cater for a situation where it is clear that there would have been actual knowledge of mistake had the actual

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Mance IJ, not all errors would entitle relief, and the key issue was whether the errors were so egregious.[117] While fault of the mistaken party such as its own carelessness was a factor in considering whether relief should be granted, it was not a decisive factor.[118] However, relief should be equitable rather than at common law such that the contract is voidable.[119] Applying this to the facts, Mance IJ held that Quoine's claim for unilateral mistake should have succeeded. B2C2 actually knew that the transactions, against the relevant market background, had only come about as a result of some fundamental error.[120] In such a circumstance, if unconscionability is a prerequisite to equitable relief,[121] it would be clearly unconscionable for B2C2 to retain the benefit of the transactions.[122]

B. Majority in Quoine: The Narrow Approach

39 On the other hand, the Wide Approach was rejected at the first instance by Thorley IJ, who considered such an approach to be wholly artificial, without recognising the fact that the parties had chosen to use deterministic algorithms as the method of contracting.[123] Thorley IJ held that the proper approach, where deterministic computer programs were in issue, is to ascertain the mind of the programmer of the relevant program at the time when it was written (the Narrow Approach).[124] Thorley IJ held that Boonen, as B2C2's programmer, had no actual knowledge of the First and Second Mistaken Beliefs. He found that when Boonen had programmed a deep price of 10 BTC to 1 ETH for sell orders, this was done to protect B2C2, rather than to take advantage of any mistake of the Counterparties.[125]

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transactions been foreseen in advance or had there been human involvement at the time (and where it is also the fact that there was such knowledge as soon as they were discovered).

117 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [195]:

> But the question is whether the errors were so egregious as to justify imposing (on whichever of Pulsar and Mr Tomita or Quoine might end up holding the parcel) a loss of perhaps millions of dollars, and benefitting B2C2 to the tune of perhaps millions of dollars by way of what some would call an uncovenanted windfall.

118 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [195], citing *Taylor v Johnson* (1983) 151 CLR 422.

119 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [195].

120 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [204].

121 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [178] and [204], where his Honour had doubted whether unconscionability is a prerequisite to equitable relief.

122 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [204].

123 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17at [204].

124 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17at [210].

125 *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [121]–[124].

40 On appeal, Menon CJ agreed with Thorley LJ that one possible relevant knowledge was that of the programmer. If the programmer had actual or constructive knowledge that the relevant offer would only ever be accepted by a party operating under a mistake and the programmer had acted to take advantage of such a mistake, the contract resulting from it could be challenged for unilateral mistake.[126] Menon CJ, however, clarified that given the relevant time for considering when knowledge of the mistake accrued extended up till the point of contracting, the relevant knowledge could not stop at the programmer.[127] He then added that algorithm user's knowledge was also relevant. If the user knew about the mistake after the algorithm had been programmed but subsequently allowed the algorithm to continue running so as to take advantage of the mistake, the contract resulting from it could also be challenged.[128] It is not necessary to establish the precise and specific details of the mistake that has arisen, and it is sufficient that the programmer or user had knowledge of a type or class of mistake in general.[129]

41 Menon CJ similarly rejected Quoine's Wide Approach involving a hypothetical meeting of traders on the floor of the exchange on the basis that such an approach was wholly artificial with no relation to the reality of the situation. Here, Menon CJ considered that the parties had chosen to transact in a manner which the parties would not even know whether a contract would be formed, and on what terms that would be. Given that the parties did not bargain for a right to review, confirm or invalidate any contract which may emerge out of the arrangements, they must have undertaken the risks arising from such transactions.[130]

42 Menon CJ agreed with Thorley IJ's findings at trial, holding that there was no such knowledge on the part of B2C2. Boonen (the director of B2C2 and the programmer of B2C2's trading algorithm) had only became aware of the problems with the Platform after its own software was programmed and on the morning after the Disputed Trades had occurred. No doubt, Boonen had found the trades problematic, having sent an e-mail to Quoine, with the subject matter "Major Quoine database breakdown, please call us urgently".[131] However, Menon CJ held that this knowledge of the mistake did not accrue to B2C2 prior to the Disputed Trades and was thus outside of the relevant time frame.[132]

126 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [103].
127 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [99].
128 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [99].
129 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [102].
130 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [104].
131 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [125].
132 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [125].

C. Divergence between the approaches: Procedural and substantive fairness

43 The key difference between the Wide and Narrow Approaches stems from whether knowledge of the mistake (actual or constructive) accruing to the non-mistaken party using deterministic algorithms, prior to or at the time of contracting, is necessary for relief. Under the Narrow Approach, such knowledge must accrue to the non-mistaken party prior to, or at the time of contracting, whereas under the Wide Approach this is not necessary. The key to understanding this difference lies in discerning the conceptions of fairness underpinning them.

44 For Menon CJ, it would seem that the focus of his approach is on procedural fairness, which deals with the "reprehensible nature of the conduct displayed by one contracting party towards another at the time the contract was formed".[133] The Narrow Approach is thus consistent with the present vitiating factors under Singapore contract law, such as misrepresentation, duress, undue influence and unconscionability, which all requires some reprehensible conduct displayed. Given that the non-mistaken party had not conducted herself in any reprehensible manner up to the point when the contract is formed, the law should protect the reasonable expectations of the non-mistaken party and uphold the sanctity of contracts. The onus is placed on the parties to bargain for a right to review, confirm or invalidate any ensuing contract that may arise from their arrangements that they had committed to.[134]

45 For Mance IJ, however, the Wide Approach centres on the substantive unfairness, with an emphasis on the fact that the content of the contract may be extremely onerous or one-sided to the disadvantage of one party.[135] Here, his focus is on the circumstances of the transaction, and requires a comparison of the transaction with other similar transactions in the market. The Wide Approach thus provides a safety net from which parties may choose to contract out of and expressly allocate such risks.[136]

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133 Burton Ong & Benjamin Wong, *Contract Law in Singapore: Cases, Materials and Commentary* (Singapore: Academy Publishing, 2019) at para 11.001.

134 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [104].

135 Burton Ong & Benjamin Wong, *Contract Law in Singapore: Cases, Materials and Commentary* (Singapore: Academy Publishing, 2019) at para 11.002.

136 Here, it is relatively uncontroversial that contract law ought to be concerned with procedural fairness. However, it remains highly debated whether contract law should, and to what extent, be concerned with substantive fairness. For an argument against such a recognition, see Rick Bigwood, *Exploitative Contracts* (Oxford: Oxford University Press, 2003) at pp 179–186, where the author rejects substantive fairness as being a concern in contract law on the basis that (a) to do so would undermine contract law as a liberal institution which promotes the choices of individuals,

(cont'd on the next page)

46 Understanding this underpinning is important from the perspective of law reform. As pointed out by Menon CJ, the area of algorithmic trading is one of dynamic change, and perhaps it might be more appropriate for legislative intervention if a more fundamental redesign is necessary.[137] Each of these approaches are best seen as starting points, with the appropriate limits to be ironed out in the future. As such, it may be valuable to assess the limits of each approach.

D. Evaluating the Narrow Approach

47 Singapore, having chosen to commit to the route of procedural fairness, may need to consider what the limits to the Narrow Approach are. Three possible concerns arise from the Narrow Approach.

48 First, it is unclear why a non-mistaken party is entitled to be immunised from discovering her counterparty's mistakes, simply by superimposing an algorithm. Menon CJ's justification for the Narrow Approach is that since parties have chosen to transact in a manner which prevents the parties from even knowing whether a contract would be formed, and on what terms it would be, they ought to bear the risks inherent in this endeavour. This reasoning, however, is not entirely satisfactory. The Narrow Approach does not take into account the extent which parties in algorithmic contracting are able to bargain for such risks of mistakes to be reallocated. Menon CJ's approach may be best applied in the context where (a) all contracting parties were aware that they were contracting with deterministic algorithms; (b) there was some antecedent agreement between the involved parties, such as platform terms; and (c) parties are sophisticated and were able to negotiate the risk allocation. In the present case, it was clear that all contracting parties were aware that their transactions were conducted via algorithms. It is the Counterparties who were forced into such trades by Quoine's margin call. Given that it was Quoine's own software error which resulted in the margin call, it is safe to assume that the Counterparties are likely to have a good claim against Quoine such as under the tort of negligence, or even

even if they were objectively bad bargains; and (b) it may be practically difficult for the court to assess or police the value of the bargain, as either the value itself is imponderable, or that the state could also be equally mistaken and that there are reasonable disagreements. *Cf* Stephen Smith, "In Defence of Substantive Unfairness" (1996) 112 LQR 138 at 145, which starts from the proposition that contract law helps individuals achieve what they could not do or otherwise not do as easily. When the law refuses to enforce a procedurally valid contract, it does not mean it infringes individual liberty. Substantially unfair contracts are merely not the sort of contracts which the law should promote or subsidise; thus, enforcement is refused.

137 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [79].

under the Margin Contracts.[138] In such a case, Menon CJ's comments make good sense. If Quoine wished to protect itself from liability (B2C2 in this case, and potentially the Counterparties), it was open for Quoine to stipulate on the Platform for the power to review such transactions. Quoine dictated the terms of the Platform and could have protected itself.[139]

49 The same, however, cannot be said if the errors occurred on the contracting parties' end. Here, the users of the Platform were merely contracting on the terms of the Platform, presumably on a take it or leave it basis. How could such users realistically ask for platform terms to allow users a right of review if their contracts were entered into due to computational errors on their end?[140] Furthermore, the Narrow Approach does not seem to be limited to where the mistaken party is *aware that she is dealing with a counterparty using deterministic algorithms*. One such scenario is where a natural person bids for an item on an online platform for $1,000, but mistakenly inputs an additional "0" such that the bid is now $10,000, and a reasonable person would be able to discern that there may be a mistake as to terms. The non-mistaken party, if dealing as a natural person, would not be successful in alleging that there was a valid contract. However, under the Narrow Approach, by superimposing a deterministic algorithm, the non-mistaken party is immunised from discovering the mistake and may now allege that there is a valid contract. How can it be said that the mistaken party had, in the absence of knowledge on how her counterparty is contracting, been taken to have accepted such reallocation of risks? It is strange that the risk allocation under present law can be unilaterally altered by the non-mistaken party, *without the consent of the counterparty*, simply with the imposition of a deterministic algorithm.

50 It is submitted that perhaps legislative intervention may be needed in order to adopt the Wide Approach adopted by Mance IJ. Here, given that it is the non-mistaken party's use of algorithms which prevents her from being able to detect her counterparties' mistake, the non-mistaken party should not be put in a better position than if she had contracted *qua* natural person. Indeed, the Wide Approach is not entirely unprecedented in local legislation in allowing relief to a mistaken

138 This was one suggestion made by Simon Thorley IJ, but he made no specific finding on this: see *B2C2 Ltd v Quoine Pte Ltd* [2019] 4 SLR 17 at [220].

139 In this case, Quoine in fact did attempt to argue (unsuccessfully) that it had given itself the power to review and reverse transactions by way of incorporating an Abberant Value Clause into the Platform Agreement: see *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 20 at [60]–[70].

140 To borrow an example from Mance IJ in *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 2, a hacker could have hacked into the traders' computers and caused such trades.

party, where the non-mistaken party did not know or ought to have known about her counterparty's mistake. Under s 16 of the Electronic Transactions Act,[141] a natural person who makes an input error in an electronic communication exchanged with the automated message system of another party may be allowed to withdraw the portion of electronic communication in which the input error was made, where the automated message system does not provide the person with an opportunity to correct the error, subject to certain bars to withdrawal. This is so even if the user of the automated message system *did not know or have reason to know* about the error in electronic communications.[142] Such a default rule also complements present consumer protection law by providing a baseline protection to the consumers, such that consumers who contract on standard forms may be protected from onerous risk allocations imposed by their counterparties.[143]

51 Second, more clarification is needed for the Narrow Approach. Menon CJ stated that relief may be given to the mistaken party if the programmer had actual or constructive knowledge that the relevant offer would only ever be accepted by a party operating under a mistake, and the programmer had acted to take advantage of such a mistake.[144] It is unfortunate that Menon CJ had included the requirement that the programmer intended to "take advantage of such a mistake". Such a requirement, similar to the discussion above on unconscionability, seems to require that the programmer had actual foresight of such a mistake.[145] This may render the constructive knowledge limb otiose. If the earlier argument on subsuming the doctrine of unilateral mistake as to terms in offer and acceptance is accepted, then actual or constructive contemplation of a mistake as to terms should render the putative contract void. No additional requirement of unconscionability or taking advantage is necessary before relief is granted. On the other hand, actual

141 Cap 88, 2011 Rev Ed, which implements the United Nations Convention on the Use of Electronic Communications in International Contracts (2898 UNTS 3) (23 November 2005; entry into force 1 March 2013).

142 United Nations Commission on International Trade Law, *Explanatory Note by the UNCITRAL Secretariat on the United Nations Convention on the Use of Electronic Communications in International Contracts* (2007) at para 227.

143 See, *eg*, para 11, Part 1 of the Second Schedule to the Electronic Transactions Act (Cap 88, 2011 Rev Ed), where the taking advantage of a consumer by including in an agreement terms or conditions that are harsh, oppressive or excessively one-sided so as to be unconscionable is a specified unfair practice.

144 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 2 at [103]; see also [104] where Sundaresh Menon CJ paraphrased the inquiry and considered that the contract could be set aside if "at the point of programming, the programmer had contemplated or ought to have contemplated that a mistake might arise on the part of a counterparty and designed the algorithm to exploit such a mistake".

145 See para 20 above.

or constructive contemplation of a mistaken assumption will render the putative contract voidable only. Whether relief is granted will also require establishing that it is unconscionable in the circumstances for the non-mistaken party to leave her counterparty mistaken.[146]

52 Third, there are some uncertainties which may arise in the application of the Narrow Approach. Menon CJ drew a distinction between contemplation of a mistake (whether actual or constructive) and merely knowing that there is a possibility of a mistake, though unlikely.[147] In the latter, it would be permissible for the non-mistaken party to insist for the contract to be performed, as in *Quoine*. Can B2C2 continue using its program in its present form going forward, given that the mistake has now eventuated, notwithstanding that such a possibility of the event occurring is arguably still low and unlikely? If "no", how is B2C2 (or any programmer) able to protect their transactions going forward? It may be practically difficult, from a programming perspective, to program an algorithm which would detect such mistakes, let alone avoid them. On the other hand, setting the threshold at such a high degree of foresight may neglect capturing what are regarded as black swan events which although rare and unlikely, have potentially severe consequences. Such black swan events are arguably what the mistaken party needs most protection from.[148] In addition, it seems inconsistent for the non-mistaken party to on the one hand claim that she has no intention of exploiting an unlikely mistake, but on the other hand insist on the contract's performance when the mistake actually eventuates. In substance, it is difficult to see the difference between the former and the latter. These issues may require further ironing out in subsequent cases.

E. Evaluating the Wide Approach

Mance IJ's approach is similar with the approaches taken in Germany,[149] the US[150] and the International Institute for the Unification of Private

146 See para 18 above on mistaken assumptions in equity, and para 26 above on mistake as to terms.

147 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 2 at [104] and [121].

148 It is well accepted in the financial regulation sector that the law aims to not only deal with likely events, but also black swan events such as the global financial crisis in 2008. Extensive regulation has developed in order to require banks to conduct themselves in a manner which mitigate such risks.

149 Basil Markesinis, Hannes Unberath & Angus Johnston, *The German Law of Contract: A Comparative Treatise* (London: Hart Publishing, 2nd Ed, 2006) at p 278 and Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at at p 55. For an English translation of § 119 of the German Civil Code (BGB), see Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at p 132.

150 *Restatement Second, Contracts* (1981) § 153.

Law (UNIDROIT) Principles of International Commercial Contracts ("PICC")[151], in that these approaches allow for the contract to be set aside for unilateral mistake without requiring that the non-mistaken party (or a reasonable person in her shoes) to have knowledge of the mistake at the point of contracting. However, there are significant divergences between these approaches in the extent of protection afforded to the non-mistaken party. This raises the first question: To what extent should the law protect the non-mistaken party?

53 Given that knowledge of the mistake is not a requirement, the non-mistaken party may have acted in reliance of the transaction. Under Singapore and English Law, upon a contract being rescinded, the benefits transferred under the contract would be reversed in the law of unjust enrichment. However, the law at present does not deal with the allocation of losses incurred in reliance of the transaction, where no benefit is transferred.[152] How should the reliance interest of the non-mistaken party be protected?[153] Three possible approaches could be taken here. Under the German approach, the non-mistaken party is entitled to compensation where her reliance is justified. The non-mistaken party may lose the right to compensation if she knows of the ground of the nullity or rescission or did not know of it due to negligence.[154] Under the approach in the US, reliance is a factor in considering whether it would be unconscionable for the contract to be avoided.[155] Under the PICC, reasonable reliance by the non-mistaken party on the contract would prevent avoidance of the contract entirely.[156] In the latter two approaches, the reliance interest is protected with the expectation measure, as opposed to the German approach. Any jurisdiction which intends to adopt the Wide Approach will have to weigh the advantages and disadvantages of each mentioned

151 UNIDROIT Principles of International Commercial Contracts 2016.

152 See, for example, in the context of frustration at common law as discussed in Andrew Stewart & John Carter, "Frustrated Contracts and Statutory Adjustment: The Case for a Reappraisal" (1992) 51 Camb LJ 66 at 77; Ewan McKendrick, "Frustration, Restitution and Loss Apportionment" in *Essays on the Law of Restitution* (Andrew Burrows ed) (Oxford: Clarendon Press, 1991) at p 165.

153 For a detailed analysis, see Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at p 79.

154 Civil Code (BGB) (Germany) § 122. See the commentary in Basil Markesinis, Hannes Unberath & Angus Johnston, *The German Law of Contract: A Comparative Treatise* (London: Hart Publishing, 2nd Ed, 2006) at p 289 and Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at p 55. For an English translation of § 122 of the BGB, see Hugh Beale, *Mistake and Non-Disclosure of Facts: Models for English Contract Law* (Oxford: Oxford University Press, 2012) at p 132.

155 *Restatement Second, Contracts* (1981) § 153, Comment d.

156 UNIDROIT Principles of International Commercial Contracts 2016, Art. 3.2.2(1).

approach in determining how much protection should be given to the non-mistaken party.

54 Second, while Mance IJ developed his rule in the context of algorithmic trading, could it be argued that such an approach might extend beyond algorithmic trading? In Mance IJ's dissent, he seemed to suggest so, stating that "if it is immediately obvious that a mistaken transfer has occurred, a failure to do the honourable thing and return the benefit can be as unconscionable as the conduct of someone who plays some positive part in bringing the transaction about".[157] If so extended, this would be in line with the approaches taken in Germany, the US and the PICC, where the rules on mistake are not limited to algorithmic trading.

VI. Conclusion

55 Rajah JC was perhaps prophetic when he made the following comment in *Digilandmall (HC)*:[158]

> Inevitably mistakes will occur in the course of electronic transmissions. This can result from human interphasing, machine error or a combination of such factors. Examples of such mistakes would include (a) human error (b) programming of software errors and (c) transmission problems in the communication systems. Computer glitches can cause transmission failures, garbled information or even change the nature of the information transmitted. … Such errors can be magnified almost instantaneously and may be harder to detect than if made in a face to face transaction or through physical document exchanges. Who bears the risk of such mistakes? It is axiomatic that normal contractual principles apply but the contractual permutations will obviously be sometimes more complex and spread over a greater magnitude of transactions. The financial consequences could be considerable. The court has to be astute and adopt a pragmatic and judicious stance in resolving such issues.

56 Contracting mistakes in cyberspace is, as noted by Rajah JC, above an area of law that is underdeveloped. *Digilandmall* was a decision which dealt with human errors in cyberspace contracting. *Quoine* will sit alongside *Digilandmall* as another ground-breaking decision, shedding clarity on software errors and deterministic algorithms. The author has sought to develop some of the ideas raised by *Quoine* and has argued the following:

> (a) Singapore ought to recognise that non-disclosure of facts should allow a contract to be vitiated in equity. Two possible ways that this development may take place were suggested.

157 *Quoine Pte Ltd v B2C2 Ltd* [2020] 2 SLR 2 at [206].
158 *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2004] 2 SLR(R) 594 at [102].

(b) The rules on unilateral mistake as to terms ought to be subsumed under those governing offer and acceptance, adopting the theory of Promisee Objectivity.

(c) The Wide Approach as propounded by Mance IJ should be adopted legislatively as a default rule, where the non-mistaken party contracts by way of deterministic algorithms. Here, the mistaken party should not be deprived of her protection under present law merely because of how the non-mistaken party chooses to contract, without the mistaken party's consent. Any reforms along the lines of the Wide Approach should consider how the reliance interest of the non-mistaken party ought to be protected.

(d) Under the Narrow Approach, it is unnecessary to show that the non-mistaken party has taken advantage of the counterparty's mistake before relief is granted, in order to avoid rendering the constructive knowledge limb under the Narrow Approach otiose.

(e) Clarification is needed on the distinction drawn between the contemplation and possibility of mistake under the Narrow Approach.

57 However, the story on contract formation and mistakes in cyberspace will not end with *Quoine*. This is especially so given that the Singapore Court of Appeal only ruled on deterministic algorithms and left open several issues for further development. What is clear is that in the dearth of cases emanating from any jurisdiction, *Quoine* will be a case study for many lawyers and commentators to come. This article has attempted to contribute to developing this story by addressing three issues raised in *Quoine*. It is hoped that the comments and proposals here provide some useful suggestions on where we may head next.
