



## COVID-19 CRISIS' CONSUMER IMPACT: DEVELOPING AN ADAPTIVE DECISION-MAKING MODEL

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### ABSTRACT

The spread of and reaction to COVID-19 has made our families, organizations, and buyers everywhere are attempting to guarantee that they can adapt to this troublesome time. Everyone must comprehend the seriousness of the outbreak and the extraordinary threat to life posed by COVID-19. Since the movement control order (MCO) was enforced the buying behavior of the average Malaysian has changed. A lot of changes in how people consuming goods and services, forcing retailers to think out of the box to engage with customers. Consumer decision-making, buyer dynamic, and conduct change will quickly adjust dependent on a scope of individual and logical qualities. Our reasoning and arranging about how to explore the world can't depend as much on programmed practices. More than ever, this unprecedented situation has led us to focus on and re-evaluate the existing decision-making model. Therefore, the main objective of this study is to develop an adaptive customer decision-making model focused on the current situation of the outbreak. How have these changes in consumer behavior affected purchasing behavior? How do individuals, families, and businesses react? Building an adaptive decision-making model is significant as the current outbreak situation revealed new and unfamiliar variables and ready for new validation.

**JEL classification:** M31.

**Keywords:** Consumer, behavior change, impact, adaptive decision-making model, COVID-19 outbreak.

*Received: May 3, 2020*

*Revised: June 22, 2020*

*Accepted: June 24, 2020*

### 1. INTRODUCTION

On March 17, Malaysian Prime Minister Muhyiddin Yassin announced the first phase of the MCO after the nation witnessed more and more positive coronavirus, also known as COVID-19, cases being reported. The original MCO, which was supposed to only last for two weeks from March 18 to March 31, was then extended for an additional two weeks as cases of COVID-19 surged to more than 3,000. Under the

MCO stages, all business premises selling day by day basics, including grocery stores and gas stations, are permitted to work in a constrained time (The Star, 2020). A change in buying behavior seems very likely. For the first time, we're locked down, we're at home, we can't go out. There are many predictions of how Malaysian shoppers are likely to change their buying habits during the coronavirus pandemic. We're living in a moment where, while it's incredibly sad and tragic, it's also a moment with enormous opportunity to delve into online shopping and e-commerce (Povera, 2020).

COVID-19 presents several challenges to the manufacturer, retailers, and policymakers. As customers take preventive steps against the virus, their health and financial issues and behavioral changes will continue to have an immense social and economic impact (Nicola, et al., 2020; Buck, et al., 2020). In the affected regions, we are already seeing drastic shifts in consumer behavior, such as bulk sales, an increase in low-contact trade, and crowd-avoidance. Furthermore, COVID-19 triggered chaos, creating chaotic conditions around the world (Sohrabi, et al., 2020). As the disease spreads, uncertainty in other areas is becoming unpredictable, subject to change, and working without common context and predictable patterns. People are adjusting and adapting to their changing, unpredictable situations, and taking various decisions (Dwyer, et al., 2006). Within these unstable environments, there is a role in consumer decision-making. We now need to think about purchasing context or patterns in terms of changing conditions and behavioral shifts. The challenge here is that when the context and pattern in which people live shift, manufacturers, retailers, and consumers will ask themselves how they can adapt and add value in the light of this new reality (Weybrecht, 2020). For now, many of them (especially consumers) seem unsure as to whether or how they should react. The creation of an adaptive decision-making model is critical as the current outbreak situation has exposed new and unknown variables and is ready for further validation.

Since the first models in the 1960s, CDM systems have improved in many respects, but the most commonly accepted models are still not well suited to the current pandemic situation. The aim of this study is, therefore, to develop and establish an adaptive customer decision-making model focused on the current situation of the outbreak. Based on an adaptive consumer decision-making model, there are many ways in which consumers can leverage various factors on decision-making to help them respond to the changing environment and support behavioral change. A systematic framework for understanding and evaluating consumer behavior decision-making can facilitate marketing decisions in the particular area, as well as provide policymakers with more insight into decision-making to make decision-making aids more successful (Pfeiffer et al, 2009), which will allow consumers to make better choices (Milkman et al, 2009; Daily and Furmanski, 2014).

## **2. LITERATURE REVIEW**

Customer decision-making is the mechanism by which the consumer chooses a variety of alternatives from the most suitable option (Payne, et al., 1993). The customer decision-making process consists of a set of actions that the buyer takes to solve a problem or satisfy a need (Williams, 2003; Stankevich, 2017). Decisions may be nuanced, contrasting, assessing, choosing, and buying from a range of items, based on the consumer's opinion on the specific product (Handlechner, 2008). In any case, in the field of buyer behavior, there is presently a defining moment where expanded

mindfulness encourages the making of a progressively solid and hearty CDM model that identifies with customer purchasing decisions during the outbreak.

## **2.1 Consumer decision-making model**

The consumer's decision-making model deals with the consumer decision-making process (Milkman et al, 2009; Stankevich, 2017). Customer decision-making is a complex mechanism that involves everything from problem identification to post-purchase activities (Daily and Furmanski, 2014). Each consumer has different needs in his or her day-to-day life and these are the needs that make different choices. Over the last 50 years, CDM models have been developed and provide work on various constructions in the cultural, marketing, and psychological fields (Payne, et al., 1993; Milner and Rosenstreich, 2013; Stankevich, 2017). This CDM model consists of three stages the Input stage; the Process stage and the outcome stage where the process required several actions taken by the customer to solve a problem or satisfy a need (Payne and Bettman, 2004). Since the first models in the 1960s, CDM frameworks have developed in many ways, but the most widely accepted models are still not well suited to the current outbreak crisis of COVID-19.

Several theoretical approaches were explored concerning their potential usefulness to the current study. From that preliminary exploration, several notable theoretical models were examined (i.e. Nicosia model (1966); Engel, Kollat, and Blackwell model (1968); Howard and Sheth model (1969); and McCarthy, Perreault and Quester model (1997)). Interestingly, most scholar agrees that the method of making good decisions is a long-standing art that has originated from past human experience and has been distilled into a variety of decision-making models. Besides, many decision-making models share similar features and characteristics but vary in order, area of focus, or underlying assumptions (Daily and Furmanski, 2014). However, for COVID-19 outbreaks and control situations during an actual crisis, time is short and uncertainty is high. It is, therefore, necessary to consider the basics of decision-making to make the right choices. This is equally important to consider whether the CDM model focuses on whether it is for the consumer rather than the marketer. Based on Milner and Rosenstreich (2013), the key drawback of existing models is that it is from the marketer's point of view rather than the customer's point of view (i.e. the Nicosia model), with customer practices only rather loosely described and little empirical research.

Another general critique of the existing model (i.e. Engel, Kollat, and the Blackwell model) is that the mechanistic approach does not extend well to a variety of decision-making situations and that the mechanisms for affecting decision-making have not been well defined (Bray, 2008; Handlechner, 2008; Lovelock & Wirtz 2010). These model shortcomings are of particular significance to the outbreak crisis due to changing patterns in demand and growing competitive pressures (Toepel 2011; Tsiotsou & Wirtz 2012). The circumstance of the COVID-19 condition significantly affects decision-making, especially without other quantifiable quality pointers. While it is increasingly definite (for example Howard and Sheth models) it additionally gives a feeling of nature of the procedure, with numerous factors having different associations with inward procedures and outer causes and data sources (Toepel, 2011). Nevertheless, Howard and Sheth's model suffers from conceptual limitations. Besides, validity problems arise due to lack of analytical research, the use of statistical techniques, the structure of the model, and the use of the constructs (Bareham 2004;

Bray, 2008; Cova & Cova 2009). Proof recommends that buyers won't generally follow the model's whole course and that the model is unreasonably intricate for everyday exchanges (Olshavsky and Granbois, 1979; Bareham, 2004; Teng and Barrows, 2009). This is an important topic for further debate in the context of the COVID-19 crisis. Despite the McCarthy et al. (1997) model with a logical structure and a thorough touch, issues with the representation of a linear process and a lack of clarification as to how psychological variables affect the process tend to be the shortcomings of the model (Milner and Rosenstreich, 2013). As noted above, these concerns are important in the sense of behavioral change during the outbreak crisis. Likewise, the possibility of clients experiencing a direct dynamic cycle is questionable, with the discoveries that specific dynamic procedures incorporate screening, eliminate, and different stages (Aribarg and Foutz, 2009) while settling on utilization choices (Dermody et al., 2009; Macinnis and Folkes, 2010).

In 2017, credit should be given to Stankevich's research by compiling a detailed list of decision-making models from a customer perspective. Table 1 below shows the list of authors and models that significantly contribute to the decision-making literature.

**Table 1: Decision-making model.**

No	Models	Authors/ Year of publication	Description
1	Simon model	Simon H., 1960	This model conceptualizes the decision-making process in three stages of activities: intelligence activity, design activity, and choice activity. Simon argues that decision making is a cognitive process that can be separated into simple, sequential steps.
2	Nicosia model	Nicosia F.M., 1966	This model concentrates on the communication process that occurs between a brand and a consumer. It uses a flow of events through different stages that are identified as fields.
3	Engel, Kollat & Blackwell model	Engel J.F., Kollat D.T., and Blackwell R.D., 1968	The components of this consumer model's decision process are the following - input, information processing, decision process, and variables influencing the decision process. The decision process component consists of five following stages – need recognition, search, alternative evaluation, purchase, and outcomes.
4	Theory of buyer Behaviour	Sheth J. & Howard J.A., 1969	The theory explains the buyer behaviour of individuals over a period. More specifically – the brand choice behaviour of the buyer.  The authors identify the elements of consumer decision process (a set of motives; several alternative courses of action, and decision mediators by which the motives are matched with the alternatives), observed the changes that occur in them over time as a result of their repetitive nature and showed how a combination of decision elements affects search processes and the incorporation of information from the buyer's commercial and social environment.  This model suggests three levels of consumer decision-making: extensive problem solving limited problem solving, and habitual response behavior.

**Table 1 (continued).**

No	Models	Authors/ Year of publication	Description
5	An alternative conceptualization for consumer behaviour and product performance	Narayana C.L. & Markin R.J., 1975	The authors explain consumer behavior by describing the term “evoked set” by including and classifying all the brands that may be in the consumer’s “awareness set”, inert, and inept set. They presented a conceptual framework for probable consumer behavior when faced with a multiplicity of brands.
6	Mintzberg model	Mintzberg H., Raisinghani D. & Theoret A., 1976	The key premise of this model is that a basic structure underlies these “unstructured” processes.
7	Keeney’s four-stage decisionmaking model	Keeney R.L., 1982	This four-stage model takes a staged approach: Structure the decision problem (generation of alternatives and specification of objectives), assess possible impacts of each alternative, determine preferences (values) of decision-makers, and evaluate and compare alternatives. This model depicts the anticipated complexities at each stage.
8	Rassuli & Harrell Model	Rassuli K.M. & Harrell G.D., 1990	The perspective proposed here is that choice and purchase can be viewed as inputs into a process, not merely the end of consumer decision-making efforts. In this way, one recognizes the feedback, from choice to other consumer behavior variables.
9	Sheth, Newman & Gross model	Sheth J.N., Newman B.I. & Gross B.L., 1991	This model presents five consumption values influencing consumer choice behavior: functional, social, conditional, emotional, and epistemic values. Any or all of the five consumption values may influence the decision.
10	Smith & Rupp’s Model	Smith A. & Rupp W., 2003	This model is an Internet-based model that takes into account external influences of website marketing, the sociocultural environment, and psychological issues on online consumer tasks which is followed by purchase and post-purchase behavior.
11	The Marketing Spirall	Armano D., 2007	Consumer behavior is like a spiral that begins with interaction as opposed to communication. The spirall amplifies as the consumer increases engagement.
12	McKinsey’s dynamic model of the consumer decision journey	Court D., Elzinga D., Mulder S. & Vetnik O.J., 2009	This model is more circular than sequential and has four primary phases: initial consideration; active evaluation, or the process of researching potential purchases; closure, when consumer buy brands; and post-purchase, when consumer experience them.

Source: Stankevich (2017).

## 2.2 Adaptive consumer decision making

The Adaptive Decision Maker offers another worldview for responding to inquiries concerning how individuals decide (Payne, et al., 1993). It concerns how people pick between various blueprints, specifically in conditions of a decision where no single other option (or alternative) is fit to all properties (or attributes, highlights). Adaptive

decision-making is a decision-making mechanism that makes use of both single-loop and double-loop learning and, where possible, cultural unlearning to create the constraints and flexibility required to promote learning and to encourage information development (Wang, 2014). Moreover, it is an issue centered, activity situated participatory system planned for creating useful and the executive's arrangements that partners relate to and consider to be their own (Bauer et al., 2013). This system distinguishes numerous partners that have various convictions and data structures and utilize different ideal models.

The Adaptive Decision-Making Model (ACDM) claims that the issues of preferential choice are typically overcome by the process of knowledge collection and comparison of alternatives and their attributes (Payne and Bettman, 2004). As such, various individuals will incline toward various methodologies and that will likewise fluctuate contingent upon the idea of the person's decision-making circumstance (Beach and Mitchell, 1978; Payne, 1976). In particular to the COVID-19 outbreak, complex contexts, and environments allow consumers to be highly adaptive and modify their behavioral responses to satisfy different functional requirements. Such adaptability can rely on buyers having the necessary complexity to promote efficiency across a range of roles.

"The Adaptive Decision Maker" gives another structure to addressing inquiries concerning how individuals decide (Payne, et al., 1993). There are 11 components in the new model and they are broadly grouped into three categories: inputs, processes, and outcomes. The adaptive decision-making process (ADMP) is an issue centered, activity situated participatory procedure planned for delivering use, and the executive's techniques that partners concur with and feel like they "own." This procedure perceives various partners who have various qualities and information frameworks and utilize different ideal models. The dynamic contexts and environments of COVID-19 allow consumers to be highly adaptive and change their behavioral responses to satisfy specific position requirements. These adaptabilities can rely on the flexibility required by consumers to promote performance across a range of roles.

### **3. METHODOLOGY**

A new conceptual model is being developed that applies to the outbreak crisis of COVID-19. This research, therefore, reviews and examines the existing CDM models for the identification of key components, intending to apply the related elements as part of a new conceptual CDM model for the COVID-19 outbreak crisis. An exploration of research into consumer behavior concerning COVID-19 supports the development of the new model. Besides, the current model better mirrors the iterative decision-making process explicit to the conditions of COVID-19 and improves the comprehension of the framework by clients and publicists and along these lines their capacity to misuse it to build the chance of positive results for all. In **Table 2**, the model comprises of three fundamental components: inputs, processes, and outcomes. However, further exploration is required to test the connection between factors in different settings, permitting the model to be refined or potentially approved.

To further advance the work, this study provides a comprehensive literature review of scholarly publications in the field of buying and marketing decision-making. Besides, the paper discusses the new developments and themes emerging. Core models in this field have been evaluated and explored based on related journal articles,

studies, and marketing books. The research design is motivated and guided by the purpose of decision-making analysis; is qualitative and exploratory; and, by conceptualization, seeks to understand the broad nature of the relationship between variables, the components of the problem / the behavioral process phenomenon in customer decision-making.

**Table 2: Components and attributes of an adaptive decision-making model.**

Components	Elements/ Attributes
Inputs <sup>1</sup>	Inputs <sup>1</sup> include <sup>2</sup> the Purchase <sup>3</sup> situation <sup>4</sup> (contextual <sup>1</sup> and environmental <sup>5</sup> variables), Consumer characteristics <sup>6</sup> (psychological <sup>7</sup> and social influences), and Information <sup>8</sup> sources (marketing <sup>9</sup> mix and interpersonal).
Processes <sup>62</sup>	Processes <sup>1</sup> include Physical <sup>1</sup> context (channels/movement <sup>1</sup> restrictions), Social context <sup>1</sup> (norms <sup>1</sup> and cultural <sup>1</sup> influence), Processing <sup>1</sup> (framing <sup>1</sup> & integrating <sup>1</sup> new information), Motivation <sup>1</sup> (emotion & identity), and Ability <sup>1</sup> (skills <sup>1</sup> & routines).
Outcomes <sup>3</sup>	Outcomes <sup>1</sup> include <sup>1</sup> the Decision <sup>1</sup> (that may <sup>1</sup> be to abort <sup>1</sup> the purchase <sup>1</sup> ), the Purchase <sup>1</sup> itself <sup>1</sup> , and Post-decision <sup>1</sup> evaluation.

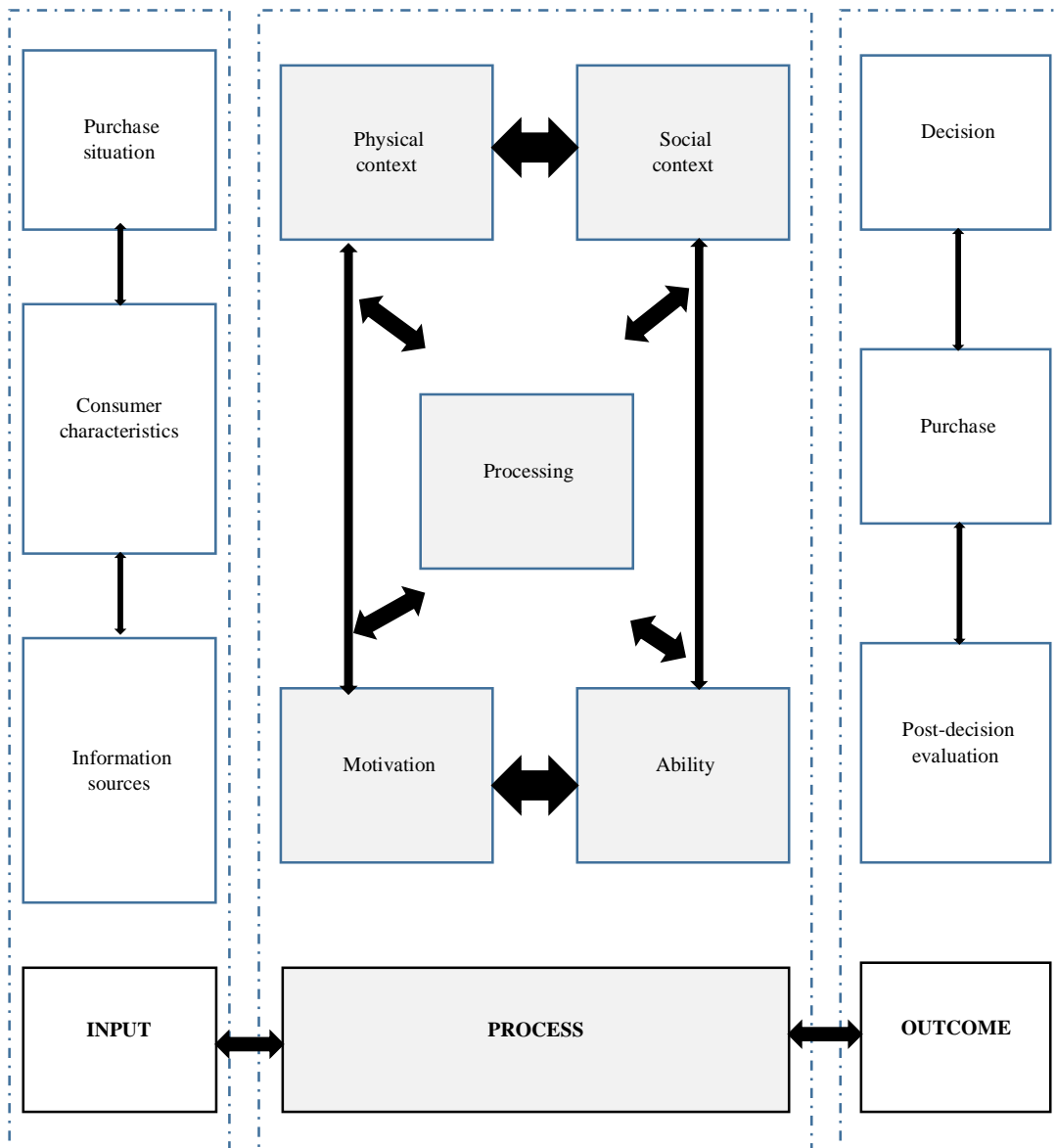
#### 4. PROPOSED ACDM MODEL FOR COVID-19 CRISIS

The conceptual model for ACDM is shown in **Figure 1**. Albeit a portion of the standards of decision-making applies to all types of transactions, the one of a kind states of an abnormal occasion, for example, the flare-up of COVID-19, requires a reframing of the factors and procedures. Hence, the model joins a portion of the components of past CDM models yet makes significant enhancements that are essential to the current coronavirus pandemic. There are 11 qualities in the new model and they are commonly partitioned into three classifications: sources of inputs, processes, and outcomes.

**ACDM Inputs** - The first segment of the new model is the sources of inputs, involved buy/purchase circumstances, customer attributes, and data/information. During the COVID-19 pandemic, buying conditions are entirely different and contribute to a "new normal" scenario. The question is whether the COVID-19 pandemic would require an unprecedented response to consumer behavior. But once the sense of normality eventually returns, what will "natural" look like? The long-term effect of COVID-19 remains to be determined, but we can see several primary areas in which dramatic changes are likely to be stimulated; purchase situations, consumer characteristics, and information. Fear and confusion are already causing irrational actions, including group activities such as storing extra foods. Hoarding is inevitably going to dissipate. But what long-lasting impact will COVID-19 has on the consumer mind? Like other disasters, the pandemic is going to bring out the best and worst of us.

**ACDM Processes** - The second significant piece of the proposed decision-making model for the consumer decision-making processes, including "physical context", "social context", "processing", "motivation", and "ability". A significant component of the model is the acknowledgment that these procedures connect as opposed to a customer finishing a straight movement these stages. Information on behavioral

buying forms in this way reveals insight into the brain research of how customers think, feel, talk about, and pick between the current other options (for example products, administrations, and retailers) as well as on how the consumer market environment (e.g. physical context, social context, processing, motivation, and ability) affects consumer motivation and final decision-making. All of this contributes to an appreciation of how marketers should develop their marketing strategies to reach the customer more effectively. The process at this point is the person to the customer as he/she is searching for the best deal. The meaning of the best arrangement/offer dependent on properties that are progressively critical to every client. It could be identified with value, quality, brand, item situating, a spot of procurement (area), ramifications of item use, and so forth.



**Figure 1: Conceptual framework of an adaptive decision-making model.**



**CDM Outcomes** - The final part of the model is the results or outcomes, including the choice (that might be to prematurely end the buy), the buy itself, and the post-decision assessment. At this stage, shoppers will assess and audit the item. Was it the best item for the buyer? Have their principles been affirmed? When the consumer feels that the product has met or surpassed the commitments made and their desires, they can eventually become a brand ambassador to influence more future buyers on the second stage of their consumer journey, raising the likelihood of the product being purchased again. At last, the results criticism into both the sources of inputs and (by implication) the processes, through their influence on recollections, mentalities, and convictions.

## **5. CONCLUSION**

Developing an adaptive decision-making model is important as the current outbreak situation has exposed new and unknown variables and is ready for further validation. A new conceptual model is being developed that applies to the outbreak crisis of COVID-19. An essential aspect of the model is the understanding that the components communicate rather than the customer through a linear progression over a sequence of stages. The new model better reflects the iterative dynamic procedure pertinent to purchaser's choice decision while explaining the connections between components of the process, and featuring the job of data as both an information and a key procedure in decision making. The new model better represents the iterative decision-making mechanism applicable to COVID-19 circumstances and improves consumer and marketers' perception of the mechanism and therefore their ability to manipulate it to maximize the probability of successful results for all. Besides, a far-reaching system for comprehension and breaking down consumer behavior decision-making will advance marketing decisions in the specific field, just as furnish policymakers with more knowledge into decision-making to build up progressively powerful decision-making guides (Pfeiffer et al, 2009), which can empower customers to settle on better choices (Milkman et al, 2009).

The primary contribution of this investigation is to help those inspired by the subject to rapidly comprehend the key issues and to approach pertinent references. Clearly, it isn't the situation that one model administers all the others, or that it speaks to a methodology that ought to consistently be applied to conditions, for example, COVID-19 specifically. The standards found in Adaptive Consumer Decision-Making (ACDM) models and the connection between them are perplexing. Further work is required to check the connection between factors in different settings, hence permitting the model to be refined as well as approved. It is recommended that academics and practitioners come up with new additions to models that aim to represent the customer as a physical context, a social context, processing, motivation, ability, and the creation of a sense of belonging through consumption. Improved understanding of the ACDM mechanism allows marketers to develop more productive and effective approaches to assist customers through a mutually beneficial method of resolution.

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